

L. Cook
578693

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STRUCTURE FILE UPDATES: 1 APR 2001 HIGHEST RN 329683-87-6
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TSCA INFORMATION NOW CURRENT THROUGH July 8, 2000

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Structure search limits have been increased. See HELP SLIMIT
for details.

=> e ".alpha.2 macroglobulin"/cn

E1 1 .ALPHA.1D-ADRENOCEPTOR (MOUSE STRAIN 129SVJ)/CN
E2 1 .ALPHA.1I3/CN
E3 0 --> .ALPHA.2 MACROGLOBULIN/CN
E4 1 .ALPHA.2,
.GAMMA.4-BIS(N-(N-(2-AMINOETHYL)-2-AMINOETHYL)AMIN
O)MESITOL/CN
E5 1 .ALPHA.2,.ALPHA.3-DIBROMO-1,2,3,4-TETRAMETHYLBENZENE/CN
E6 1 .ALPHA.2,.ALPHA.3-DIBROMOPREHNITENE/CN
E7 1 .ALPHA.2,.ALPHA.3-DIHYDROXYPREHNITENE/CN
E8 1 .ALPHA.2,.ALPHA.4,.ALPHA.6-TRIS(ETHYLAMINO)MESITOL/CN
E9 1 .ALPHA.2,.ALPHA.4,.ALPHA.6-TRIS(PHENYLTHIO)MESITOL/CN
E10 1 .ALPHA.2,.ALPHA.4-BIS(DIMETHYLAMINO)MESITOL METHYL
CHLORIDE
QUATERNARY AMMONIUM SALT/CN
E11 1
.ALPHA.2,.ALPHA.4-BIS(N-(N-(2-AMINOETHYL)-2-AMINOETHYL)AMINO
)MESITOL/CN
E12 1
.ALPHA.2,.ALPHA.4-BIS(N-(N-(2-AMINOETHYL)-2-AMINOETHYL)AMINO
)MESITOL METHYL CHLORIDE QUATERNARY AMMONIUM SALT/CN

=> e ".alpha.2-macroglobulin"/cn

E1 1 .ALPHA.2-HS-GLYCOPROTEIN (HUMAN PRECURSOR)/CN
E2 1 .ALPHA.2-LEVANTANOLIDE/CN
E3 0 --> .ALPHA.2-MACROGLOBULIN/CN
E4 1 .ALPHA.2-MACROGLOBULIN (696-LYSINE) (HUMAN PROTEIN MOIETY
RE
DUCED)/CN
E5 1 .ALPHA.2-MACROGLOBULIN (HUMAN AMYLOID-.BETA.-BINDING
DOMAIN
FRAGMENT)/CN

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Page 1

E6 1 .ALPHA.2-MACROGLOBULIN (HUMAN AMYLOID-.BETA.-BINDING
DOMAIN PLUS .ALPHA.2-MACROGLOBULIN RECEPTOR-BINDING DOMAIN
FRAGMENT)/CN
E7 1 .ALPHA.2-MACROGLOBULIN (HUMAN CLONE P.ALPHA.2M PRECURSOR
PRO TEIN MOIETY REDUCED)/CN
E8 1 .ALPHA.2-MACROGLOBULIN (HUMAN COMPLETE
.ALPHA.2-MACROGLOBULI N RECEPTOR-BINDING DOMAIN FRAGMENT)/CN
E9 1 .ALPHA.2-MACROGLOBULIN (HUMAN PRECURSOR PROTEIN MOIETY
REDUC ED)/CN
E10 1 .ALPHA.2-MACROGLOBULIN (HUMAN PROTEIN MOIETY REDUCED)/CN
E11 2 .ALPHA.2-MACROGLOBULIN (HUMAN)/CN
E12 1 .ALPHA.2-MACROGLOBULIN (LIMULUS POLYPHEMUS CLONE
.LAMBDA.ZIP 1 PRECURSOR)/CN

=> s ell;d ide can;e fatty acid binding protein/cn

L1 2 ".ALPHA.2-MACROGLOBULIN (HUMAN)"/CN

L1 ANSWER 1 OF 2 REGISTRY COPYRIGHT 2001 ACS
RN 287743-14-0 REGISTRY
CN .alpha.2-Macroglobulin (human) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 2: PN: W00046246 SEQID: 2 claimed protein
FS PROTEIN SEQUENCE
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, TOXLIT

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
*** USE 'SQD' OR 'SQIDE' FORMATS TO DISPLAY SEQUENCE ***
1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 133:159917

E1 1 FATTY ACID AMIDES, COCO, N-(HYDROXYETHYL)-/CN
E2 1 FATTY ACID AMINOHYDROLASE/CN
E3 0 --> FATTY ACID BINDING PROTEIN/CN
E4 1 FATTY ACID BINDING PROTEIN (ASCARIS SUUM)/CN
E5 1 FATTY ACID BIOSYNTHESIS PROTEIN PLSX (PSEUDOMONAS
AERUGINOSA STRAIN PAO1 GENE PLSX)/CN
E6 1 FATTY ACID C-10 HYDRATASE/CN
E7 1 FATTY ACID CALCIUM SALTS/CN
E8 1 FATTY ACID CIS-TRANS ISOMERASE/CN
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E9 1 FATTY ACID CIS/TRANS ISOMERASE (VIBRIO CHOLERAE STRAIN
N1696 1 GENE VCA0552)/CN
E10 1 FATTY ACID COA LIGASE/CN
E11 1 FATTY ACID COENZYME A LIGASE 5 (HUMAN GENE FACL5/ACS5)/CN
E12 1 FATTY ACID CONDENSING ENZYME/CN

=> s e4;d ide can;e mouse glomular basal membrane/cn 5

L2 1 "FATTY ACID BINDING PROTEIN (ASCARIS SUUM)"/CN

L2 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2001 ACS
RN 189833-72-5 REGISTRY
CN Protein (Ascaris suum fatty acid-binding As-pl8) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN **Fatty acid binding protein (Ascaris suum)**
CN GenBank U51906-derived protein GI 1272384
FS PROTEIN SEQUENCE
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
*** USE 'SQD' OR 'SQIDE' FORMATS TO DISPLAY SEQUENCE ***
1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 126:341265

E1 1 MOUSE EPIDERMAL GROWTH FACTOR/CN
E2 1 MOUSE FAT 1 CADHERIN (MOUSE GENE MFAT1)/CN
E3 0 --> MOUSE GLOMULAR BASAL MEMBRANE/CN
E4 1 MOUSE GROWTH HORMONE-RELEASING FACTOR/CN
E5 1 MOUSE INTESTINAL TREFOIL FACTOR/CN

=> e gmb/cn 5

E1 1 GMA 9/CN
E2 1 GMA-L 10/CN
E3 0 --> GMB/CN
E4 1 GMB 1/CN
E5 1 GMB 4030/CN

=> s gmb ?/cn

L3 2 GMB ?/CN

=> d 1-2 ide can

L3 ANSWER 1 OF 2 REGISTRY COPYRIGHT 2001 ACS
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RN 220812-55-5 REGISTRY
CN **GMB 4030 (9CI)** (CA INDEX NAME)
MF Unspecified
CI PMS, MAN
PCT Manual registration
SR CA
LC STN Files: CA, CAPLUS

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

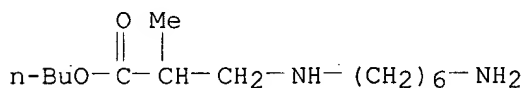
3 REFERENCES IN FILE CA (1967 TO DATE)
3 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 132:223508

REFERENCE 2: 130:210502

REFERENCE 3: 130:197565

L3 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2001 ACS
RN 59216-20-5 REGISTRY
CN Propanoic acid, 3-[(6-aminohexyl)amino]-2-methyl-, butyl ester (9CI) (CA INDEX NAME)
OTHER NAMES:
CN **GMB 1**
FS 3D CONCORD
MF C14 H30 N2 O2
LC STN Files: CA, CAPLUS



2 REFERENCES IN FILE CA (1967 TO DATE)
2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 85:64396

REFERENCE 2: 84:181044

=> fil medl,caplus,biosis,embase,wpids,jicst,ntis,scisearch,biotechno

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FULL ESTIMATED COST	19.05	19.20

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=> s (kidney disease or nephrolog? or renal replacement therap? or (kidnet or renal)(3a)(fail? or insufficienc?)

UNMATCHED LEFT PARENTHESIS '(KIDNEY'
The number of right parentheses in a query must be equal to the
number of left parentheses.

=> s (kidney disease or nephrolog? or renal replacement therap? or (kidney or renal)(3a)(fail? or insufficienc?))

L4	123491	FILE MEDLINE
L5	33208	FILE CAPLUS
L6	77268	FILE BIOSIS
L7	85171	FILE EMBASE
L8	3080	FILE WPIDS
L9	52224	FILE JICST-EPLUS
L10	745	FILE NTIS
L11	47946	FILE SCISEARCH
L12	6453	FILE BIOTECHNO

TOTAL FOR ALL FILES

L13 429586 (KIDNEY DISEASE OR NEPHROLOG? OR RENAL REPLACEMENT THERAP? OR
(KIDNEY OR RENAL)(3A)(FAIL? OR INSUFFICIENC?))

=> s l13 and (alpha 2 macroglobulin or macroglobulin or blood protein! or
major urin? protein)

<-----User Break----->

u

SEARCH ENDED BY USER

SEARCH ENDED BY USER

=> s l13 and (alpha 2 macroglobulin or macroglobulin or blood protein! or
major urin? protein or l1)

L14 1190 FILE MEDLINE
 L15 168 FILE CAPLUS
 L16 57 FILE BIOSIS
 L17 82 FILE EMBASE
 L18 1 FILE WPIDS
 L19 34 FILE JICST-EPLUS
 'CN' IS NOT A VALID FIELD CODE
 L20 4 FILE NTIS
 'CN' IS NOT A VALID FIELD CODE
 L21 36 FILE SCISEARCH
 L22 9 FILE BIOTECHNO

TOTAL FOR ALL FILES

L23 1581 L13 AND (ALPHA 2 MACROGLOBULIN OR MACROGLOBULIN OR BLOOD PROTEIN

! OR MAJOR URIN? PROTEIN OR L1)

=> s (gmb or l3 or mouse glomul? basal membrane) and l23

L24 0 FILE MEDLINE
 L25 0 FILE CAPLUS
 L26 0 FILE BIOSIS
 L27 0 FILE EMBASE
 L28 0 FILE WPIDS
 L29 0 FILE JICST-EPLUS
 'CN' IS NOT A VALID FIELD CODE
 L30 0 FILE NTIS
 'CN' IS NOT A VALID FIELD CODE
 L31 0 FILE SCISEARCH
 L32 0 FILE BIOTECHNO

TOTAL FOR ALL FILES

L33 0 (GMB OR L3 OR MOUSE GLOMUL? BASAL MEMBRANE) AND L23

=> s l23 and (l2 or fatty acid bind? protein or fabo or (kidney or renal)(w)tissue or urine or liver type or proximal tubule)

<-----User Break----->

u

SEARCH ENDED BY USER

=> s l23 and (l2 or fatty acid bind? protein or fabp or (kidney or renal)(w)tissue or urine or liver type or proximal tubule)

L34 257 FILE MEDLINE
 L35 58 FILE CAPLUS
 <-----User Break----->

u

SEARCH ENDED BY USER

=> s l23 and (l2 or fatty acid bind? protein or fabp) and ((kidney or renal)(w)tissue or urine or liver type or proximal tubule)

L37 0 FILE MEDLINE
 L38 1 FILE CAPLUS
 L39 0 FILE BIOSIS
 L40 0 FILE EMBASE

L41 0 FILE WPIDS
 L42 0 FILE JICST-EPLUS
 'CN' IS NOT A VALID FIELD CODE
 L43 0 FILE NTIS
 'CN' IS NOT A VALID FIELD CODE
 L44 0 FILE SCISEARCH
 L45 0 FILE BIOTECHNO

TOTAL FOR ALL FILES

L46 1 L23 AND (L2 OR FATTY ACID BIND? PROTEIN OR FABP) AND ((KIDNEY OR RENAL) (W) TISSUE OR URINE OR LIVER TYPE OR PROXIMAL TUBULE)

=> d cbib abs

L46 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2001 ACS

1999:359733 Document No. 130:349390 Method for examining **kidney diseases**.. Yamanouchi, Masaya; Honda, Akiko; Uchida, Hiromi; Sugaya, Takeshi; Kimura, Kenjiro (Tanabe Seiyaku Co., Ltd., Japan). PCT Int. Appl. WO 9927363 A1 19990603, 31 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (Japanese). CODEN: PIXXD2. APPLICATION: WO 1998-JP5319 19981126. PRIORITY: JP 1997-323684 19971126.

AB A diagnostic method is described for examg. **kidney diseases** by immunol. detecting a **fatty acid-binding protein** derived from **kidney tissues** contained in the specimen sampled from mammals other than rodents. This method can provide examn. results contg. information highly useful in diagnosing the prognosis of **kidney diseases** hardly obtained by the existing methods. Based on the results obtained by this method, an appropriate therapy can be selected by taking the risk concerning the prognosis into consideration. This method is applicable not only to **kidney tissue** samples, but also to **urine** samples, and therefore, the examn. can be conveniently and efficiently performed.

=> s l23 and (l2 or fatty acid bind? protein or fabp or (kidney or renal)(w)tissue or urine or liver type or proximal tubule)

L47 257 FILE MEDLINE
 L48 58 FILE CAPLUS
 L49 9 FILE BIOSIS
 L50 20 FILE EMBASE
 L51 0 FILE WPIDS
 L52 7 FILE JICST-EPLUS
 'CN' IS NOT A VALID FIELD CODE
 L53 1 FILE NTIS
 'CN' IS NOT A VALID FIELD CODE

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L54 11 FILE SCISEARCH
L55 1 FILE BIOTECHNO

TOTAL FOR ALL FILES

L56 364 L23 AND (L2 OR FATTY ACID BIND? PROTEIN OR FABP OR (KIDNEY OR
RENAL) (W) TISSUE OR URINE OR LIVER TYPE OR PROXIMAL TUBULE)

=> s l56 and (exam? or diagno? or determin? or identif? or analy?)

L57 184 FILE MEDLINE
L58 44 FILE CAPLUS
L59 5 FILE BIOSIS
L60 18 FILE EMBASE
L61 0 FILE WPIDS
L62 6 FILE JICST-EPLUS
L63 0 FILE NTIS
L64 7 FILE SCISEARCH
L65 1 FILE BIOTECHNO

TOTAL FOR ALL FILES

L66 265 L56 AND (EXAM? OR DIAGNO? OR DETERMIN? OR IDENTIF? OR ANALY?)

=> s l56 and prognos?

L67 7 FILE MEDLINE
L68 6 FILE CAPLUS
L69 0 FILE BIOSIS
L70 0 FILE EMBASE
L71 0 FILE WPIDS
L72 0 FILE JICST-EPLUS
L73 0 FILE NTIS
L74 0 FILE SCISEARCH
L75 0 FILE BIOTECHNO

TOTAL FOR ALL FILES

L76 13 L56 AND PROGNOS?

=> s (l66 or l76) and (yamanouchi m? or honda a? or hase h? or sugaya t? or
kimura k)/au,in

'IN' IS NOT A VALID FIELD CODE

L77 0 FILE MEDLINE
L78 1 FILE CAPLUS
L79 0 FILE BIOSIS
'IN' IS NOT A VALID FIELD CODE
L80 0 FILE EMBASE
L81 0 FILE WPIDS
L82 0 FILE JICST-EPLUS
'IN' IS NOT A VALID FIELD CODE
L83 0 FILE NTIS
'IN' IS NOT A VALID FIELD CODE
L84 0 FILE SCISEARCH
'IN' IS NOT A VALID FIELD CODE
L85 0 FILE BIOTECHNO

TOTAL FOR ALL FILES

too many - narrowed
using priority date
see page 10-end.

L86 1 (L66 OR L76) AND (YAMANOUCHI M? OR HONDA A? OR HASE H? OR
SUGAYA T? OR KIMURA K)/AU,IN

=> s 186 not 146

L87 0 FILE MEDLINE
L88 0 FILE CAPLUS
L89 0 FILE BIOSIS
L90 0 FILE EMBASE
L91 0 FILE WPIDS
L92 0 FILE JICST-EPLUS
L93 0 FILE NTIS
L94 0 FILE SCISEARCH
L95 0 FILE BIOTECHNO

TOTAL FOR ALL FILES

L96 0 L86 NOT L46

=> s (166 or 176) and pd<=november 1998

<-----User Break----->

u

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=> fil caplus;s (158 or 168) and pd<=november 1998

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	ENTRY	SESSION
FULL ESTIMATED COST	148.67	167.87
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	ENTRY	SESSION
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FILE COVERS 1967 - 2 Apr 2001 VOL 134 ISS 15
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15180717 PD<=NOVEMBER 1998

(PD<=19981199)

L97 35 (L58 OR L68) AND PD<=NOVEMBER 1998

=> d 1-35 cbib abs

L97 ANSWER 1 OF 35 CAPLUS COPYRIGHT 2001 ACS

1998:805685 Document No. 130:217556 Elevated free fosphenytoin concentrations in uremic serums: uremic toxins hippuric acid and indoxyl sulfate do not account for the impaired protein binding of fosphenytoin. Dasgupta, Amitava; Havlik, Dean (Department of Pathology and Laboratory Medicine, Houston Medical School, University of Texas, Houston, TX,

77030,

USA). Ther. Drug Monit., 20(6), 658-662 (English) 1998. CODEN: TDMODV. ISSN: 0163-4356. Publisher: Lippincott Williams & Wilkins.

AB Fosphenytoin is a new phosphate ester prodrug of phenytoin. Impaired protein binding of phenytoin in uremia has been extensively documented, which prompted us to investigate the protein binding of fosphenytoin in uremic sera. Also studied was the role of uremic toxins hippuric acid

and

indoxyl sulfate as potential inhibitor of the protein binding of fosphenytoin because these compds. impair protein binding of phenytoin in uremia. Five serum pools were prepd. from normal volunteers and five pools from patients with uremia. None of them received phenytoin. The normal serum pools were dild. with saline to mimic the albumin concn. of uremic pool. Both the dild. normal pool and the uremic pool were supplemented with fosphenytoin; after incubation at room temp. for 30

min,

total and free fosphenytoin concns. as phenytoin equiv. were measured using fluorescence polarization immunoassay (Abbott Labs.; Abbott Park, IL, U.S.A.). The authors obsd. significantly elevated free fosphenytoin

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concn. in uremic sera compared with that of normal sera in all cases. Because both normal and uremic sera had the same concns. of albumin, the elevated free fosphenytoin concn. in uremic sera was not caused by hypoalbuminemia. Both indoxyl sulfate and hippuric acid cause significant displacement of phenytoin from protein binding. In contrast, none caused any displacement of fosphenytoin from protein binding.

L97 ANSWER 2 OF 35 CAPLUS COPYRIGHT 2001 ACS

1998:365288 Document No. 129:24327 Occurrence of proteinuria after exposure to mercury at the workplace. Heinz, J.; Steinhoff, J.; Kessel, Richard (Inst. Arbeitsmedizin, Medizinische Univ. Luebeck, Luebeck, D-23538, Germany). Zentralbl. Arbeitsmed., Arbeitsschutz Ergon., 48(5), 182-187 (German) 1998. CODEN: ZAAEEL. ISSN: 0944-2502. Publisher: Dr. Curt Haefner Verlag GmbH.

AB A group of workers exposed to Hg in a recycling plant was analyzed for early indicators for renal damage and dysfunction by detg. the urinary proteins .alpha.1-microglobulin, .alpha.2-macroglobulin, IgG, transferrin, albumin, .beta.2-microglobulin, and C-reactive protein. Hg concns. in the ambient air and those in the 24-h urine were measured. Some test persons showed increased proteinuria with and without transferrin. Most frequently the std.

values for albumin and .alpha.1-microglobulin were exceeded. Only 1 person showed a close relation between the tubular parameter .alpha.1-microglobulin and the current exposure to Hg.

L97 ANSWER 3 OF 35 CAPLUS COPYRIGHT 2001 ACS

1998:162600 Document No. 128:305289 2-Sec-butyl-4,5-dihydrothiazole is a ligand for mouse urinary protein and rat .alpha.2u-globulin:

physiological

and toxicological relevance. Lehman-McKeeman, Lois D.; Caudill, Douglas; Rodriguez, Pedro A.; Eddy, Cynthia (Miami Valley Laboratories, Human Safety Department, Procter and Gamble Co., Cincinnati, OH, 45253-8707, USA). Toxicol. Appl. Pharmacol., 149(1), 32-40 (English) 1998. CODEN: TXAPA9. ISSN: 0041-008X. Publisher: Academic Press.

AB Mouse urinary protein (MUP) and .alpha.2u-globulin are structurally homologous proteins that belong to a superfamily of ligand-binding proteins and represent the major urinary proteins excreted by adult male mice and rats, resp. Although a variety of xenobiotics bind to .alpha.2u-globulin and produce a male rat-specific hyaline droplet nephropathy, no endogenous ligand for this protein has been identified. Despite extensive sequence homol., MUP does not bind to hyaline droplet-inducing agents. While performing expts. with purified MUP, we obsd. that it presented with a strong, distinctive odor reminiscent of mouse urine. To det. whether this odor was the result of contamination or degrdn. or was attributed to an endogenous ligand bound to the protein, the protein was subjected to thermal desorption and any released volatile compds. were detected with a gas chromatograph equipped with an external sniff port

and

mass spectrometer. With this approach, two odorous compds. were detected at the sniff port by a human observer, but only one was present in sufficient mass to allow identification. This compd., which presented with the characteristic odor, was subsequently identified as 2-s butyl-4,5-dihydrothiazole (DHT) by GC/MS/matrix

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isolation IR and NMR analyses. The identification of DHT was confirmed by comparing the chromatog. and spectral properties to those of the synthesized authentic compd. In direct contrast, purified urinary .alpha.-2u-globulin did not present with an obvious odor, and no volatile ligands were detected on this protein. Although DHT is a major endogenous ligand for MUP, it was also found to competitively inhibit the binding of [14C]d-limonene-1,2-epoxide to .alpha.2u-globulin with relatively high affinity ($K_i = 2.3 \mu\text{M}$). When dosed orally to F344 rats, DHT (1 mmol/kg for 3 days) caused the characteristic exacerbation

of

hyaline droplets in male rat kidneys and increased renal levels of immunoreactive .alpha.2u-globulin about threefold over control levels. These results indicate that despite structural homol., MUP and .alpha.2u-globulin are distinguished by the presence of a volatile endogenous ligand only on the former, a distinction that may reflect differences in the physiol. functions of the two proteins. Furthermore, although DHT can bind to both MUP and .alpha.2u-globulin, renal toxicity was only obsd. in rats, thereby emphasizing the unique toxicol.

properties

of .alpha.2u-globulin in the development of hyaline droplet nephropathy.

L97 ANSWER 4 OF 35 CAPLUS COPYRIGHT 2001 ACS

1997:460355 Document No. 127:133066 New strategies in screening **urine** for exclusion and differentiation of renal diseases by **analyzing** individual proteins. Guder, Walter G.; Hofmann, Walter (Institute of Clinical Chemistry, Bogenhausen Community Hospital, Munich, D-81925, Germany). Jugosl. Med. Biochem., 16(2), 69-75 (English) 1997. CODEN: JMBIFF. ISSN: 0354-3447. Publisher: Drustvo Medicinskih Biohemicara Jugoslavije.

AB A quantification of renal proteins of different mol. size has been shown to be useful in characterizing the mechanism and medical causes of proteinuria. By **analyzing urine** albumin, .alpha.1-microglobulin, IgG and .alpha.2-**macroglobulin** together with total protein, prerenal, glomerular, tubular and postrenal cause of proteinuria can be detected and differentiated by their specific **urine** protein patterns. Using automated turbidimetric procedures prerenal proteinurias are

characterized

by an albumin/total protein ratio below 0.3. Tubulo-interstitial diseases, neg. in the test strip procedure are detected and clearly differentiated from other causes of proteinuria by their high .alpha.1-microglobulin/albumin ratios. In postrenal proteinuria, .**alpha.2-macroglobulin** proved to be a useful marker, when albumin excretion exceeds 100 mg/L **urine**. This protein exhibits plasma-like ratios to albumin in postrenal causes

whereas

it is much lower in renal proteinurias. The new strategy, which has been tested in more than 500 clin. and histochem. proven cases of renal diseases, more sensitively detects glomerular and tubulo-interstitial diseases when applied in **urine** screening and allows to sep. all clin. important causes from **anal.** of a morning spot **urine** sample.

L97 ANSWER 5 OF 35 CAPLUS COPYRIGHT 2001 ACS

1997:147508 Document No. 126:210405 Differential glycosylation of Bence-Jones protein and kidney impairment in patients with plasma cell
Prepared by M. Hale 308-4258 Page 12

dyscrasia. Kagimoto, Tadashi; Nakakuma, Hideki; Hata, Hiroyuki; Hidaka, Michihiro; Horikawa, Kentaro; Kawaguti, Tatsuya; Nagakura, Shoichi; Iwamoto, Norihiro; Shirono, Kenji; et al. (College of Medical Science and the Second Department of Internal Medicine, Kumamoto University,

KUMAMOTO,

862, Japan). J. Lab. Clin. Med., 129(2), 217-223 (English) 1997

. CODEN: JLCMAK. ISSN: 0022-2143. Publisher: Mosby-Year Book.

- AB Although Bence Jones protein (BJP) is generally accepted to be critically involved in the pathogenic process of kidney impairment in patients with myeloma, patients with BJP do not always have kidney dysfunction. As proteins often undergo glycosylation and alter their mol. nature, it is expected that the heterogeneity in kidney dysfunction can be explained at least partly by the differential affinity to the kidneys of BJP dependent on its glycosylation. Accordingly, the authors biochem. analyzed the structures of carbohydrates of **urine** BJP to correlate the structure with kidney function. BJP was obtained from 16 patients with myeloma, 2 patients with light-chain amyloidosis, a patient with plasma-cell leukemia, and a patient with Waldenstrom's macroglobulinemia. All BJP had five forms of oligosaccharides: three forms of biantennary oligosaccharides and two forms of triantennaries. The three biantennaries

correspond to previously reported oligosaccharides on only .lambda.-type BJP, whereas the triantennaries are novel oligosaccharides found on BJP. Among the five oligosaccharides, the triantennary oligosaccharide Gal.beta.1-4GlcNAc.beta.1-2Man.alpha.1-6{Gal.beta.1-4GlcNAc.beta.1-4(Gal.beta.1-4GlcNAc.beta.1-2)Man.alpha.1-3}Man.beta.1-4GlcNAc.beta.1-4GlcNAc showed a significant neg. correlation with the serum creatinine level. Thus **detn.** of BJP glycosylation may be useful for the evaluation of kidney impairment in patients with BJP.

L97 ANSWER 6 OF 35 CAPLUS COPYRIGHT 2001 ACS

1996:543041 Document No. 125:218814 The change of humoral immune, acute phase proteins and **urine** proteins in children with nephrotic syndrome. Xie, Wenguang; Wei, Yushu; Zhou, Liangyu (Dep. Pediatrics, Affiliated Hosp. North Sichuan Med. Coll., Nanchong, 637000, Peop. Rep. China). Zhongguo Mianyixue Zazhi, 12(1), 49-52 (Chinese) 1996. CODEN: ZMZAEE. ISSN: 1000-484X.

- AB Twenty proteins and 3 indicators in serum, and total protein (TP) and 11 proteins in **urine**, from NS (Nephrotic syndrome) patients were **detd.** In comparison with normal children, NS patients' serum contents of C5, C1-INH, IgM, HP, .alpha.2M and CIC increased very significantly, Pg increased significantly, Clq, IgG, ALB and Tf decreased very significantly, the activity of CH50 decreased significantly, and ESR was very notably high. The contents of **urine** TP and 11 proteins in acute phase of HS were higher than normal very significantly. When the condition was improving, these indicators reached normal range gradually. The results suggest that in NS patients, glomerular filtration membrane serves a double purpose in control of select of filtrate substance mol. wt. and elec. charge, and this selection function play a decisive role for the leakage content of different serum proteins.

L97 ANSWER 7 OF 35 CAPLUS COPYRIGHT 2001 ACS

1996:477536 Document No. 125:162675 Development and evaluation of a **urine** protein expert system [UPES]. Ivandic, Miroslav; Hofmann, Prepared by M. Hale 308-4258

Walter; Guder, Walter G. (Inst. Klinische Chemie, Staedt. Krankenhaus Muenchen-Bogenhausen, Munich, D-81925, Germany). Clin. Chem.

(Washington,

D. C.), 42(8, Pt. 1), 1214-1222 (English) 1996. CODEN: CLCHAU.

ISSN: 0009-9147.

- AB Based on the quant. **detn.** of creatinine, total protein, albumin, .alpha.1-microglobulin, IgG, .**alpha.2-macroglobulin**, and N-acetyl-.beta.-D-glucosaminidase in **urine** in combination with a test strip screening, the findings of hematuria, leukocyturia, and proteinuria can be assigned to prerenal, renal, or postrenal causes. By using this graded **diagnostic** strategy as a knowledge base, we developed a computer-based expert system for **urine** protein differentiation ("UPES") as a decision-supporting tool. The knowledge base was implemented as a combination of "if/then" rules and two-step bivariate distance classification of marker proteins. The knowledge for this form of pattern

recognition was derived from the results for a set of 267 patients with clin. and histol. documented nephropathies. To **det.** the **diagnostic** value of UPES, we tested another set of data: results for 129 **urine analyses** from 94 patients. Using these data, the system reached 98% concordance with the clin. **diagnoses** for the patients and was superior to the **diagnostic** interpretation of 4 human experts. UPES was successfully integrated into the lab. routine process, including automated data import.

L97 ANSWER 8 OF 35 CAPLUS COPYRIGHT 2001 ACS

1996:352925 Document No. 125:31354 Clinical significance of urinary N-acetyl-.beta.-D-glucosaminidase measurement in patients with diabetes mellitus. Ye, Shandong; Zhu, Xixing (Endocrinology Department, Huashan Hospital, Shanghai Medical University, Shanghai, Peop. Rep. China). Shanghai Yixue, 19(2), 66-69 (Chinese) 1996. CODEN: SIHSD8. ISSN: 0253-9934.

- AB Urinary N-acetyl-.beta.-D-glucosaminidase (UNAG), urinary albumin excretion (UAE), urinary .beta.2-**macroglobulin** (U.beta.2-MG) and urinary glucose were measured in 105 patients with diabetes mellitus.

The

measurements of UNAG and UAE had similar sensitivity for early **diagnosis** of diabetic nephropathy (DN), among the patients with incipient DN, UNAG had significant pos. relationship with UAE, but not in patients with clin. DN, whether the U.beta.2-MG was normal or elevated, UNAG was not related to U.beta.2-MG. Among the three group patients

whose

24 h urinary glucose were less than 5, 5 to 15 and more than 15 g, resp., the UNAG had no relationship with urinary glucose. The study indicated that UNAG can be used as a sensitivity index of screening incipient DN.

L97 ANSWER 9 OF 35 CAPLUS COPYRIGHT 2001 ACS

1996:276323 Document No. 124:309665 Development and validation of new screening tests for nephrotoxic effects. Price, R. G.; Taylor, S. A.; Chivers, I.; Arce-Tomas, M.; Crutcher, E.; Franchini, I.; Alinovi, R.; Cavazzini, S.; Bergamaschi, E.; et al. (Division Life Sciences, King's College London, London, W8 7AH, UK). Hum. Exp. Toxicol., 15(Suppl. 1), s10-19 (English) 1996. CODEN: HETOEA. ISSN: 0960-3271.

- AB Within the framework of an European Commission funded project, groups of industrial workers exposed to heavy metals (cadmium, mercury and lead) or

solvents were studied together with corresponding control groups. Eighty-one measurements were carried out on **urine** and serum samples and the scientific results together with individual questionnaire information were entered into a central database. Data obtained was assessed centrally and individually in subsidiary studies. The measurable contributions were assessed either singly or in combination, of smoking, gender, metal exposure and site, to nephrotoxicity. The potential value of each test as an indicator of nephrotoxicity was then assessed on the basis of sensitivity and specificity. A no. of new tests including prostaglandins and for extracellular matrix components were investigated as well as established tests for renal damage and dysfunction. The data obtained from this comprehensive study emphasizes the value of noninvasive biomarkers for the early detection of nephrotoxicity due to environmental toxins. The urinary profile varied with the type of environmental/occupational toxin. By careful selection of a small panel of markers they can be used to indicate the presence of renal damage, the principal region affected, and to monitor the progress of disease and damage. Biomarkers were also used to confirm and tentatively establish safe exposure levels to nephrotoxins.

L97 ANSWER 10 OF 35 CAPLUS COPYRIGHT 2001 ACS

1996:85851 Document No. 124:199493 **Determination** of a **urine** microprotein profile and its use in **diagnosis** and treatment of diabetic nephropathy. Huang, Peiwen; Zhang, Qinyi; Ni, Zhaohui; Zhang, Guisheng; Liu, Guoming (Renji Hospital, Shanghai Second Medical University, Shanghai, 200000, Peop. Rep. China). Shanghai Yixue, 18(10), 572-3, 576 (Chinese) 1995. CODEN: SIHSD8. ISSN: 0253-9934.

AB The levels of **.beta.-macroglobulin** (.beta.-MG), **.alpha.-macroglobulin** (.alpha.-MG), transferrin, and retinol-binding protein (RBP) and NAG (N-acetyl-.beta.-D-glucosaminidase) activity **detd.** in the **urine** of patients with diabetes (group I; urinary protein excretion .gtoreq.30 mg dL-1 and group II; urinary protein excretion >30 mg dL-1) were significantly higher than that of the normal control group. There were pos. correlations between blood glucose, total cholesterol (T-Ch), blood urea nitrogen (BUN), serum creatinine (SCr) and RBP, NAG, and a pos. correlation between triglyceride (TG) and IgG was found.

L97 ANSWER 11 OF 35 CAPLUS COPYRIGHT 2001 ACS

1995:412954 Document No. 122:155762 Method of sample preparation for **urine** protein **analysis** with capillary electrophoresis. Liu, Cheng-Ming; Wang, Hann-Ping (Beckman Instruments, Inc., USA). PCT Int. Appl. WO 9502182 A1 19950119, 40 pp. DESIGNATED STATES: W: CA, JP; RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1994-US5631 19940518. PRIORITY: US 1993-91844 19930709.

AB Processes are provided for pretreating body fluid (e.g., **urine**) compns. and subsequently **analyzing** the pretreated body fluid compns. for **analytes** of interest esp. in clin. disease **diagnosis**. Processes for pretreating the compns. include providing a size exclusion gel having a mol. wt. fractionation range or a mol. wt. exclusion such that the size exclusion gel is capable of

excluding or fractionating the **analytes** of interest and then causing the compn. to contact the size exclusion gel to sep. the **analytes** from low-mol.-wt. compn. components which interfere with the sepn. and **anal.** of the **analytes** of interest. Processes for **analyzing** pretreated compns. include electrophoretic methods such as capillary zone electrophoresis which involve the sepn. and detection of **analytes** of interest. **Examples** are given of the **detn.** of proteins in the **urine** of patients with myeloma and **kidney disease**.

L97 ANSWER 12 OF 35 CAPLUS COPYRIGHT 2001 ACS

1995:119737 Document No. 122:53250 Pathogenesis of spontaneous nephrosis in mice. Urinary protein in nephrotic mice. Yamada, Kanae; Kurosawa, Tsutomu; Okamoto, Munehiro; Yue, Bing Fei; Mizuno, Shinya; Naiki, Masaharu

(Med. Sch., Osaka Univ., Suita, 565, Japan). Exp. Anim., 43(4), 527-34 (Japanese) 1994. CODEN: JIDOAA. ISSN: 0007-5124.

AB There is a paucity of model animals for naturally occurring nephrosis. The nephrotic mouse strain, ICGN, found from ICR mouse colony at National Institute of Health could be one of the most suitable model for nephrosis.

We maintained the strain of mice which was originated from the hybrid between the nephrotic ICGN mice and ICR mice. Nephrosis is **diagnosed** with the presence of albumin band on SDS-PAGE of the **urine**. The detection of urinary albumin using SDS-PAGE could be valuable for early **diagnosis** of nephrosis in the mice. The total urinary protein concn. was **detd.** on the course of nephrosis. The nephrotic mice showed a slightly higher protein concn. between 2 and 6 days old as compared to control mice. Until 16 day old, it was maintained relatively low level. Thereafter, the total urinary protein increased gradually. However, the **diagnosis** of nephrosis with total urinary protein alone may be limited due to the **major urinary protein** which can be detected even in normal rodents.

L97 ANSWER 13 OF 35 CAPLUS COPYRIGHT 2001 ACS

1993:406453 Document No. 119:6453 **Identification** of a cell line that expresses a cell surface and a soluble form of the gp330/receptor-associated protein (RAP) Heymann nephritis antigenic complex. Orlando, Robert A.; Farquhar, Marilyn Gist (Div. Cell. Mol. Med., Univ. California San Diego, La Jolla, CA, 92093, USA). Proc. Natl. Acad. Sci. U. S. A., 90(9), 4082-6 (English) 1993. CODEN: PNASA6. ISSN: 0027-8424.

AB Gp330 is a large glycoprotein located in clathrin-coated pits at the surface of the glomerular and **proximal tubule** epithelia in the rat kidney. It was originally **identified** as the target of autoimmune antibodies in Heymann nephritis (HN) and has since been shown to be a member of the low d. lipoprotein receptor gene family and to form a stable assocn. with receptor-assocd. protein (RAP), which together constitute the HN antigen complex (HNAC). Progress in defining the normal functions of gp330 as well as the mol. mechanisms of HN has been hampered by the lack of an available kidney cell line that expresses this protein. The authors here report the **identification** of a rat yolk sac carcinoma cell line (L2) that synthesizes HNAC and expresses it in coated pits at the cell surface.

Gp330 and RAP from L2 cells are immunol. identical to their kidney counterparts, and peptide maps of gp330 yielded identical peptide fragments. Characterization of the cell line revealed that there are 3.3 .times. 10⁴ gp330 mols. per L2 cell and that the cells produce a sol.

form

of gp330 that is released into the medium. Heparin ligand blot **anal.** demonstrated that RAP but not gp330 binds heparin. By heparin affinity chromatog., gp330 and RAP co-purify, indicating that the glycosaminoglycan binding site within RAP is accessible when the subunit is complexed with gp330. These results indicate that the L2 cell line provides a valid and useful model for studies on the function of HNAC and the pathogenesis of HN.

L97 ANSWER 14 OF 35 CAPLUS COPYRIGHT 2001 ACS

1993:37111 Document No. 118:37111 Kinetics of plasma fibronectin in childhood. III. Plasma fibronectin values in idiopathic nephrotic syndrome. Oshizaka, Hiroyuki (Sch. Med., Niigata Univ., Niigata, 951, Japan). Niigata Igakkai Zasshi, 106(7), 654-9 (Japanese) 1992. CODEN: NIGZAY. ISSN: 0029-0440.

AB Plasma fibronectin (p-FN) concns. of patients with idiopathic nephrotic syndrome (INS) were measured successively to **examine** correlations with progression of the illness. The p-FN values in INS

were

av. 442.8 .mu.g/mL which was markedly high. During the active period of illness, p-FN showed high values. While urinary protein was pos., p-FN concns. were even higher, av. 491.5 .mu.g/mL. There were strong correlations between p-FN concns. and total protein, serum albumin, total cholesterol, and **.alpha.2-macroglobulin**.

There were no differences in p-FN values during remission between

frequent

relapsers and nonfrequent relapsers. The p-FN values were high at onset and they returned to normal ranges as symptoms improved to remission.

The

above results suggest that p-FN concn. may reflect activities of INS and is a significant factor for **prognosis** of the illness.

L97 ANSWER 15 OF 35 CAPLUS COPYRIGHT 2001 ACS

1991:161823 Document No. 114:161823 Role of kallikrein-kinin and renin-angiotensin-aldosterone systems in the development of hypertension in glomerulonephritis. Ryabov, S. I.; Kucher, A. G.; Kotovoi, Yu. O.; Kayukov, I. G. (I Leningr. Med. Inst., Leningrad, USSR). Klin. Med. (Moscow), 68(12), 22-5 (Russian) 1990. CODEN: KLMIAS. ISSN: 0023-2149.

AB The blood serum levels of pre-kallikrein, kallikrein, **.alpha.1-antitrypsin**, **.alpha.2-macroglobulin**, and kininase 1, and 24-h urinary secretion of kallikrein were **detd.** in humans with glomerulonephritis and developing arterial hypertension. Blood plasma levels of active and total renin were also **detd.** The degrdn. of kinins by kininase 1 and inhibition of kallikrein by **.alpha.1-antitrypsin** and **.alpha.2-macroglobulin** may have a pathogenic significance.

L97 ANSWER 16 OF 35 CAPLUS COPYRIGHT 2001 ACS

1989:590802 Document No. 111:190802 **Diagnostic** use of an **analysis** of urinary proteins by a practicable sodium dodecyl sulfate-electrophoresis method and rapid two-dimensional electrophoresis. Prepared by M. Hale 308-4258 Page 17

Lapin, Alexander; Gabl, Franz; Kopsa, Herbert (Inst. Klin. Chem. Laboratoriumsdiagn., Univ. Wien, Vienna, A-1090, Austria). Electrophoresis (Weinheim, Fed. Repub. Ger.), 10(8-9), 589-95 (English) 1989. CODEN: ELCTDN. ISSN: 0173-0835.

- AB Two methods suitable for routine clin. **analyses** of urinary proteins are presented and compared. The first is a horizontal SDS-PAGE technique, suitable for simultaneous **anal.** of 20 native urinary samples. This method uses polyacrylamide gradient gels, prepd. with a lab.-built gel casting device. The second method is a rapid two-dimensional electrophoresis procedure, combining cellulose acetate electrophoresis and SDS-electrophoresis. The first step uses a routine system (Chemetron), the second sepn. step followed by staining with Coomassie Brilliant Blue R is performed on the PhastSystem. The resulting two-dimensional patterns reveal urinary proteins distributed according to the 5-zone pattern of native proteins (albumin, .alpha.-, .alpha.2-, .beta.-, .gamma.-globulin) as well as to the logarithm of their mol. wts. **Examples** of (routine) **diagnoses** with a special interest in the monitoring of kidney transplant patients are shown.

L97 ANSWER 17 OF 35 CAPLUS COPYRIGHT 2001 ACS

1989:188760 Document No. 110:188760 A practicable two-dimensional electrophoretic method for routine **analysis** of urinary proteins. Lapin, Alexander (Inst. Klin. Chem. Laboratoriumsdiagn., Univ. Wien, Vienna, A-1090, Austria). J. Clin. Chem. Clin. Biochem., 27(2), 81-6 (English) 1989. CODEN: JCCBDT. ISSN: 0340-076X.

- AB A 2-dimensional electrophoretic method is described for the routine clin. **anal.** of urinary proteins. Cellulose acetate electrophoresis is used for the 1st dimension, and SDS electrophoresis for the 2nd dimension, the latter being performed together with gel staining (Coomassie Blue) on the Phast System. The sepn. media are supplied as ready-to-use materials. The method is reliable and reproducible, and is complete within 100 min. The resulting 2-dimensional pattern of major proteinuria constituents is evaluated visually from the distribution according to mol. wt. (2nd dimension) and from the 5 zone pattern of cellulose acetate electrophoresis (1st dimension). Certain marker proteins specific for certain pathol. changes, as well as certain characteristic changes in protein spot constellation, can be more easily recognized and evaluated than in 1-dimensional SDS electrophoresis.

L97 ANSWER 18 OF 35 CAPLUS COPYRIGHT 2001 ACS

1985:108553 Document No. 102:108553 Studies on the **determination** of urinary lysozyme by enzyme immunoassay and its significance.

Nakahara, Takashi; Ishikawa, Chieko; Togo, Hisahiro; Kozuki, Yoshitaka; Noma, Ikuzo (Cent. Clin. Lab., Takasago City Hosp., Takasago, Japan). Eisei Kensa, 33(5), 734-8 (Japanese) 1984. CODEN: EIKEAS. ISSN: 0367-052X.

- AB Studies were made on the method for the **detn.** of urinary lysozyme (I) by enzyme immunoassay based on the sandwich method with alk. phosphatase as a marker. The data obtained by the present method were compared with those obtained by the bacteriolysis method. In the present method a satisfactory std. curve was obtained with 16.5 mM of substrate and 60 min of reaction time. The present enzyme immunoassay **detd** . urinary I in the range from 50 to 100 ng/mL. Urinary I concn. was Prepared by M. Hale 308-4258 Page 18

increased in all renal diseases of children except idiopathic nephrosis syndrome. Urinary I concn. reflects the grade of renal diseases; thus, the effectiveness of treatment for renal diseases can be **detd.** by the **detn.** of urinary I concn. A change in I concn. in renal diseases could be found earlier than the change of **.beta.2-macroglobulin**, creatinine, and BUN concns.

L97 ANSWER 19 OF 35 CAPLUS COPYRIGHT 2001 ACS

1984:434910 Document No. 101:34910 Studies on tissue thromboplastic activity

assay method with a chromogenic substrate (S-2222). Fukuda, Chisako; Iijima, Kenji; Nakamura, Katsumi (Coll. Med. Care Technol., Tottori

Univ.,

Yonago, 683, Japan). Rinsho Byori, 32(3), 313-16 (Japanese) 1984

. CODEN: RBYOAI. ISSN: 0485-1404.

AB Thromboplastin was **detd.** by colorimetry at 405 nm with S-2222 (Bz-Ile-Glu-Gly-Arg-p-nitroaniline), which liberates p-nitroaniline in proportion to coagulation factor Xa. The **detn.** was simple, rapid, and superior to conventional methods in sensitivity.

Anti-thrombin

III inhibited the liberation of p-nitroaniline, but **.alpha.1-antitrypsin** and **.alpha.2-macroglobulin** did not affect the **detn.** Urinary thromboplastin was increased in juvenile patients with renal disease.

L97 ANSWER 20 OF 35 CAPLUS COPYRIGHT 2001 ACS

1983:554626 Document No. 99:154626 Applications of Fast Protein Liquid Chromatography in the separation of plasma proteins in **urine** and cerebrospinal fluid. Cooper, E. H.; Turner, R.; Johns, E. A.; Lindblom, H.; Britton, V. J. (Unit Cancer Res., Univ. Leeds, LS2 9JT, UK). Clin. Chem. (Winston-Salem, N. C.), 29(9), 1635-40 (English) 1983. CODEN: CLCHAU. ISSN: 0009-9147.

AB Fast Protein Liq. Chromatog. (FPLC), in which an anion-exchange column is used, provides rapid sepn. and reproducible profiling of the plasma proteins in **urine** and cerebrospinal fluid (CSF). Chromatog. sepn. of the proteins takes 1 h for **urine** specimens and 45 min for CSF. The elution sequence from the anion-exchange column is similar to the electrophoretic mobility. Individual proteins have the same retention times independently of which type of specimen is used. The elution characteristics of 21 plasma proteins were **identified**. Some applications of this system are illustrated, including the profiling of tubular proteinuria, the isolation of Bence-Jones proteins from **urine**, and the investigation of Hb-derived products in the CSF.

L97 ANSWER 21 OF 35 CAPLUS COPYRIGHT 2001 ACS

1980:510115 Document No. 93:110115 A simple radial diffusion technique for measuring selectivity of proteinuria. Jones, B. M.; Hua, A. S. P. (Dep. Pathol., Queen Mary Hosp., Hong Kong, Hong Kong). J. Clin. Pathol., 33(6), 598-9 (English) 1980. CODEN: JCPAAK. ISSN: 0021-9746.

AB Protein selectivity was **detd.** in patients with proteinuria by radial immunodiffusion with gels contg. 2% agar in 0.1M glycine-EDTA (pH 7.0), 0.1% NaN₃, and rabbit anti-human transferrin or rabbit anti-human **.alpha.2-macroglobulin** antiserum. The precipitin ring diams. were measured, and the Protein Selectivity Index (K) was calcd. **Urine/serum** transferrin and **urine /serum .alpha.2-macroglobulin** were

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- detd. by drawing a calibration curve of precipitin ring diam. (arithmetic scale) against the reciprocal of the serum diln. (log scale). Patients with K values <1.9 had nonselective proteinuria, whereas K values .gtoreq.1.9 showed selective proteinuria. **Urine** from several patients with selective proteinuria contained no demonstrable . **alpha.2-macroglobulin** and, in these cases, K = .infin. (i.e., highly selective). The method is sensitive, inexpensive, and more precise than agar gel double diffusion. The method is useful in the evaluation of patients with nephritis.
- L97 ANSWER 22 OF 35 CAPLUS COPYRIGHT 2001 ACS
1979:589013 Document No. 91:189013 Application of sodium dodecyl sulfate polyacrylamide gel electrophoresis to fractionation of **urine**.
II. Qualitative estimation of each band and percentage of transferrin clearance. Sano, Kiyoko; Kanamori, Kiyoko; Yoshida, Junko; Cho, Hiroko; Hosaki, Seijin (Hosp., Tokyo Coll. Med. Dent., Tokyo, Japan). Seibutsu Butsuri Kagaku, 22(4), 285-9 (Japanese) 1979. CODEN: SBBKA4. ISSN: 0031-9082.
- AB **Urine** from normal humans was fractionated into 21 bands by Na dodecyl sulfate polyacrylamide gel electrophoresis. The following bands were identified: band 2, .**alpha.2-macroglobulins**; band 9, 2H + L chains of Igs; band 10, transferrin; band 11, albumins; band 13, H chain of Igs; band 17, L chain of Igs; and band 20, .**beta.2-microglobulins**. This method may be used in the **detn.** of urinary contents of transferrin, an indicator for glomerulonephritis.
- L97 ANSWER 23 OF 35 CAPLUS COPYRIGHT 2001 ACS
1979:572916 Document No. 91:172916 Urinary protein **analysis** and its significance in the **diagnosis** of renal diseases. Slovacek, R.; Lukes, J.; Slaby, P. (Lek. Fak., Univ. Karlova, Plzen, Czech.). Cesk. Pediatr., 34(5), 271-3 (Czech) 1979. CODEN: CEPEA3. ISSN: 0069-2328.
- AB Na dodecylsulfate (SDS) polyacrylamide gel electrophoresis was useful in the differentiation of glomerular and tubular proteinuria.
- Immunofixation
by specific antisera showed that several serum proteins partially dissocd. in the presence of SDS (e.g., .**alpha.2-macroglobulin** and IgM). This limits the selectivity of this method.
- L97 ANSWER 24 OF 35 CAPLUS COPYRIGHT 2001 ACS
1979:2576 Document No. 90:2576 Two-dimensional immunoelectrophoresis applied to the study of proteinurias. Pantano, Emanuele; De Jaco, Mario (Lab. Anal. Chim.-Clin. Microbiol., Osp. Civ. Piacenza, Piacenza, Italy). Ric. Clin. Lab., 8(Suppl. 1), 269-72 (English) 1978. CODEN: RCLADN. ISSN: 0390-5748.
- AB Two-dimensional immunoelectrophoresis (IE) of non-concd. **urine** was employed, using immune anti-plasma serum proteins, in an attempt to decrease the **anal.** time required for concg. **urine**. **Urine** was collected in NaN₃, 1st sepd. by electroimmunodiffusion by the Laurell method, then dild. if necessary to bring the albumin concn.

to 5 mg%. This concn. of **urine** then was subjected to 2-dimensional IE on agarose using barbitol buffer, pH 8.6. In **physiol. proteinuria**, small quantities (5 mg%) of albumin and traces of .alpha.1-antitrypsin and transferrin were obsd. In selective **proteinuria**, in **urine** the albumin conc. was >5 mg%; and a marked peak of transferrin, 1-2 peaks in the .alpha.1-region (.alpha.1-antitrypsin and .alpha.1-acid glycoprotein), and haptoglobin in the .alpha.2-area were obsd. Patterns also are shown for non-selective glomerular proteinuria. The method enables one to evaluate selectively glomerular proteinurias without concn. of **urine**, and is inexpensive since it requires only small quantities of antiserum (40 .mu.L).

L97 ANSWER 25 OF 35 CAPLUS COPYRIGHT 2001 ACS

1977:185390 Document No. 86:185390 New approach to evaluation of **proteinuric**

states. Ellis, Demetrius; Buffone, Gregory J. (Sch. Med., George Washington Univ., Washington, D. C., USA). Clin. Chem. (Winston-Salem,

N.

C.), 23(4), 666-70 (English) 1977. CODEN: CLCHAU.

AB The use of immunonephelometric methods for measuring specific urinary proteins was evaluated. Using a nephelometer to detect light scattering (angle, 31.degree.), some proteins were **detd.** immunonephelometrically in serum and aliquots of 24-h **urines** from 50 apparently healthy children, ages 2-17 years. The mean urinary excretion rate (mg/24 h) and the range of values was: for albumin 5.5 (range, 0-13.3), for transferrin 0.5 (0-1.9), for IgG 3.3 (0-12), and for

alpha.2-macroglobulin 0.6 (0-2.3). Direct comparison of the values for **pathol. urines** with those for a ref. population may offer more meaningful information concerning the integrity of the glomerular basement membrane than is provided by protein selectivity indices, and measuring a plasma protein such as albumin in **urine** may better define **pathol. proteinuria**.

L97 ANSWER 26 OF 35 CAPLUS COPYRIGHT 2001 ACS

1977:28266 Document No. 86:28266 Study of some serum and urinary proteins during Masugi nephritis in the rat. Versavel, Ch.; Dudragne, D.; De Vonne, T. Lebreton; Mouray, H. (Lab. Biochim., Fac. Med., Tours, Fr.). Comp. Biochem. Physiol. A, 55(3A), 231-6 (English) 1976. CODEN: CBPAB5.

AB Sephadex G-200 chromatog. of **urine** from pubescent and prepubescent rats with and without induced Masugi nephritis produced excluded and diffused fractions; a third peak appeared in **pathol. cases** only. Max. absorbance of the 2 first peaks was unrelated to the total **proteinuria** which varied during the exptl. disease course. Quant. **anal.** of the total **proteinemia** and **.alpha.-macroglobulins** did not differ in normal and nephritic rat serum, but albumin and **.beta.-** and **.gamma.-globulins** were decreased in nephritis. The presence of a prealbumin in prepubescent rat serum indicated an age effect on Masugi nephritis symptoms.

L97 ANSWER 27 OF 35 CAPLUS COPYRIGHT 2001 ACS

1976:519031 Document No. 85:119031 Serum and urinary protein

analysis by SDS-PAA electrophoresis combined with immunoprecipitation: dimer albumin in the nephrotic syndrome. Boesken, Prepared by M. Hale 308-4258 Page 21

Wolf H.; Noller, Edmund (Med. Univ. Clin., Freiburg/Br., Ger.). Protides Biol. Fluids, Proc. Colloq., Volume Date 1975, 23, 437-40 (English) 1976. CODEN: PBFPA6.

- AB Methods are described for obtaining serum protein mol. wt. patterns in different nephropathies. When comparing normal with nephrotic serums by Na dodecyl sulfate (SDS)-polyacrylamide (PAA) gel electrophoresis, the nephrotic serums, besides showing a selective loss of albumins, transferrin, and proteins smaller than 7 S immunoglobulin, contained a higher percent of macroproteins such as immunoglobulins, **.alpha.2-macroglobulins**, and lipoproteins as compared to normal serums. In .apprx.40 of 600 **urines** and in all of 20 corresponding serums, a protein was detected that was not present in normal serums or in most lower unselective glomerular proteinurias; this protein, representing .apprx.10-15% of the urinary or serum proteins, was **identified** as albumin dimer by several immunol. techniques. Histochem. studies of the pathol. of the albumin dimer are discussed.

L97 ANSWER 28 OF 35 CAPLUS COPYRIGHT 2001 ACS

1974:92816 Document No. 80:92816 Electroimmunodiffusion study of serum protein renal clearance in **urine** without concentration. Barral de Pizzolato, Maria; Pizzolato, Marco A. (Dep. Anal. Clin., Hosp. Esc. "Jose de San Martin", Buenos Aires, Argent.). Rev. Asoc. Bioquim. Argent., 38(205-206), 49-53 (Spanish) 1973. CODEN: RABAAO.

- AB Various electrophoretic and immunoelectrophoretic methods for **detg** . the degree of selectivity of proteinurias were described, and the **diagnostic** and **prognostic** values of serum protein renal clearances in the evaluation of glomerular damage in the nephrotic syndrome were **analyzed**. The electroimmunodiffusion technique for the **detn.** of **.alpha.2-macroglobulin** and albumin in serum and **urine** without concn. was described, and the correlation between the Cameron index and the ratio of clearances of **.alpha.2-macroglobulin/albumin** in relation to the histol. picture in nephrotic patients was demonstrated.

L97 ANSWER 29 OF 35 CAPLUS COPYRIGHT 2001 ACS

1974:12060 Document No. 80:12060 Albumin and **.alpha.-2-macroglobulin** clearance. New approaching method for studying selectivity of proteinuria in unconcentrated **urine**. Brancaccio, D.; Rivolta, E.; Graziani, G.; Pizzolato, M. (Inst. Urol., Univ. Milan, Milan, Italy). Nephron, 12(2), 150-6 (English) 1973. CODEN: NPRNAY.

- AB Albumin and **.alpha.2-macroglobulin** clearances were investigated in unconcd. **urine** samples by Laurell's technique (rocket electrophoresis on cellulose acetate gel) in order to assess the adaptability of the method in clin. practice. In 37 patients with glomerular proteinuria, **.alpha.2-macroglobulin/albumin** and immunoglobulin G/transferrin clearance ratios were compared. The correlation was satisfactory in all histol. groups considered, with the exception of focal glomerulosclerosis and amyloidosis.

L97 ANSWER 30 OF 35 CAPLUS COPYRIGHT 2001 ACS

1973:464192 Document No. 79:64192 **Analysis** of urinary protein. Wakashin, Masafumi; Narita, Mitsuharu (Sch. Med., Chiba Univ., Chiba, Japan). Rinsho Byori, 21(3), 248-52 (Japanese) 1973. CODEN: Prepared by M. Hale 308-4258

RBYOAI.

- AB Immunoglobulins (Ig) G, A and their fragments were detected and **identified** by gel filtration (Sephadex G-200), the Ouchterlony method, immunoelectrophoresis, and ultracentrifugation as normal urinary proteins. These antibody mols. and fragments were considered to have originated in serum. Various antigens originating from the **kidney tissue** were also found in normal **urine**. Upon **examg.** the **urine** of patients with kidney disorders, a IgG clearance/IgA clearance ratio of <2.0 tended to indicate cases that were difficult to treat. Furthermore, IgM (19 S), and esp. **.alpha.2-macroglobulin** (18.05 S) and **.gamma.-macroglobulin** were const. found in patients' **urine**. The relation of the presence and the level of these abnormal urinary proteins to various kidney disorders was discussed.

L97 ANSWER 31 OF 35 CAPLUS COPYRIGHT 2001 ACS

1973:464191 Document No. 79:64191 Comparison between immunochemical and physical chemical **analyses** of the molecular size of urinary proteins. Van Oss, Carel J.; Hawking, Mary K.; Bronson, Paul M. (Sch. Med., State Univ. New York, Buffalo, N. Y., USA). Biochem. Med., 7(3), 466-72 (English) 1973. CODEN: BIMDA2.

- AB In patients with nephrotic syndrome, immunochem. tests showed **.alpha.2-macroglobulin** in the **urine** of 17 of 29 and immunoglobulin G in 6 of 11. Phys.-chem. tests showed only fragments of these proteins, with mol. wts. between 50,000 and 100,000.

L97 ANSWER 32 OF 35 CAPLUS COPYRIGHT 2001 ACS

1971:30255 Document No. 74:30255 **Analysis** of the proteinuria. 1. Excretion of plasma components in the **urine**. Takayanagi, Nobutatsu; Iwaki, Mamoru; Hongo, Tadahiko (Clin. Lab., Toyama City Hosp., Toyama, Japan). Rinsho Byori, 18(8), 575-8 (Japanese) 1970. CODEN: RBYOAI.

- AB Characteristics in urinary protein pattern were **examd.** immunol. and electrophoretically of 75 patients with various renal disorders, in connection with clin. observations. A correlation was found between the severity of the disorders and changes in pattern of proteinuria. Leakage of many kinds of plasma proteins into **urine**, esp. of high-mol.-wt. protein such as **.alpha.2-macroglobulin**, 19 S **.gamma.-globulin** (IgM), and **.beta.1-lipoprotein**, was marked in patients with severe renal disorder. An increase of **.gamma.2-globulin** (IgG) was found in **urine** in such patients, esp. in patients with collagen diseases, in whom the av. ratio albumin/IgG ratio was 2.9. The presence of anti-renal antibody activity was demonstrated in **urine** of such patients by immunoelectrophoresis and double diffusion.

L97 ANSWER 33 OF 35 CAPLUS COPYRIGHT 2001 ACS

1970:507504 Document No. 73:107504 Serum and urinary proteins, lysozyme (muramidase), and renal dysfunction in mono- and myelomonocytic leukemia. Pruzanski, W.; Platts, M. E. (Immunoproteins Res. Lab., Univ. Toronto, Toronto, Can.). J. Clin. Invest., 49(9), 1694-1708 (English) 1970. CODEN: JCINAO.

- AB Serum levels, urinary excretion, and clearances of several proteins of different mol. wts. were studied in 18 patients with mono- and myelomonocytic leukemia. Nine patients had normal renal function (group
Prepared by M. Hale 308-4258 Page 23

A) and 9 had impaired renal function with azotemia (group B). The majority of patients in both groups had increased concn. of immunoglobulins, esp. IgG, IgA, and IgM; IgD level was normal. Serum transferrin and **.alpha.2-macroglobulin** were frequently reduced while the level of ceruloplasmin was often increased, esp. in patients with azotemia. The activity of lysozyme in the serum was high in all patients, but was considerably higher in group B.

Proteinuria

was found in most patients but was more prominent in group B. Almost invariably albumin constituted less than 25% of the total protein excreted. Qual. anal. of various urinary proteins by immunochem. techniques and clearance studies suggested the presence of glomerular as well as tubular dysfunction. Detn. of urinary lysozyme frequently showed no direct correlation between the serum level of the enzyme and its concn. in the **urine** or its clearance by the kidney. In addn. to glomerular filtration, impaired tubular reabsorption may account for the high level of lysozyme in the **urine**. The very high level of lysozyme in the glomerular filtrate and possibly hypergamma-globulinemia may play a role in the induction of tubular damage. Renal impairment was correlated with histol. changes in the kidneys. From a comparative study of various leukemias, it seems that the combined glomerular-tubular dysfunction is a manifestation unique to mono- and myelomonocytic leukemia.

L97 ANSWER 34 OF 35 CAPLUS COPYRIGHT 2001 ACS

1969:94859 Document No. 70:94859 Proteinuria after albumin infusion in patients with renal disease. Marchena, Carlos; Becker, E. Lovell (New York Hosp., New York, N. Y., USA). Proc. Soc. Exp. Biol. Med., 129(3), 951-4 (English) 1968. CODEN: PSEBAA.

AB Urinary protein excretion in patients with proteinuria was studied by using an immunopptn. technique. Six protein fractions were **detd** . with specific antisera to orosomucoid, albumin, transferrin, 7 S .gamma.-globulin, .gamma.1A-globulin, and .alpha.2M-globulin. I.v. infusion of salt-poor albumin (25 g.) increased the total amt. of protein in the **urine** while the protein selectivity pattern was const. before, during, and after the albumin infusion.

L97 ANSWER 35 OF 35 CAPLUS COPYRIGHT 2001 ACS

1967:63642 Document No. 66:63642 Turnover of **.alpha.2-macroglobulins** in the nephrotic syndrome. Kluthe, Reinhold; Hagemann, U.; Kleine, Norbert (Med. Univ. Poliklin., Freiburg/Breisgau, Ger.). Vox Sang., 12(4), 308-11 (English) 1967. CODEN: VOSAAD.

AB cf. CA.65, 5998f. A high concn. of **.alpha.2-macroglobulins** is a typical finding in the nephrotic syndrome. Human **.alpha.2-macroglobulins**, 131I-labeled, were injected i.v. into 6 normal subjects and 6 nephrotics (5 with chronic glomerulonephritis and 1 with amyloid nephrosis), and the rate of decay of

.alpha.2-macroglobulin radioactivity was estd. Results of this and other **detns.** indicated that the excretion of **.alpha.2-macroglobulins** into the **urine** is negligible in active nephrosis and that the abs. catabolic rate of **.alpha.2-macroglobulins**

lies within normal limits. If a balanced protein metabolism is assumed, the synthesis of **.alpha.2-macroglobulins** must be normal, and the elevation of this fraction in the serum would appear to be the result of more extensive excretions of proteins with smaller mol. wts.

=> s (yamanouchi m? and honda a? and hase h? and sugaya t? and kimura k)/au,in

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          90 YAMANOUCI M?/AU
          11 YAMANOUCI M?/IN
        547 HONDA A?/AU
        186 HONDA A?/IN
        205 HASE H?/AU
          71 HASE H?/IN
        220 SUGAYA T?/AU
          70 SUGAYA T?/IN
        618 KIMURA K/AU
           0 KIMURA K/IN
L98      0 (YAMANOUCI M? AND HONDA A? AND HASE H? AND SUGAYA T? AND
KIMURA      K)/AU,IN

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ANSWER 7 OF 7 MEDLINE

AN 91170283 MEDLINE

DN 91170283

TI Primary structure and cellular distribution of two fatty acid-binding proteins in adult rat kidneys.

AU Kimura H; Odani S; Nishi S; Sato H; Arakawa M; Ono T

CS Department of Biochemistry, Niigata University School of Medicine, Japan..

SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1991 Mar 25) 266 (9) 5963-72.
Journal code: HIV. ISSN: 0021-9258.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals; Cancer Journals

EM 199106

AB Fatty acid-binding proteins (FABPs) were purified from the kidneys of female and male rats and characterized by primary structure and histological distribution in the kidney. Two FABPs (14 and 15.5 kDa) were found in male rat kidney cytosol whereas only 14-kDa FABP could be recognized in female rat kidneys throughout the purification steps. The amino acid sequence of the 14-kDa FABP was identical to that of rat **heart** FABP deduced from the cDNA sequence (Heuckeroth, R. O., Birkenmeier, E. H., Levin, M. S., and Gordon, J. I. (1987) J. Biol. Chem. 262, 9709-9717). Structural analysis of the male-specific 15.5-kDa FABP identified this second FABP as a proteolytically modified form of alpha 2u-globulin, an 18.7-kDa **major urinary protein** of adult male rats (Unterman, R. D., Lynch, K. R., Nakhasi, H. L., Dolan, K. P., Hamilton, J. W., Cohn, D. V., and Feigelson, P. (1981) Proc. Natl. Acad. Sci. U.S.A. 78, 3478-3482) which shares a common ancestry with a number of hydrophobic ligand-binding proteins such as serum retinol-binding proteins. Immunohistochemical investigation disclosed that **heart**-type FABP (14-kDa FABP) is localized in the cytoplasm of the epithelia of the distal tubules in both male and female rat kidneys whereas 15.5-kDa FABP immunostaining was observed predominantly in the endosomes or lysosomes of proximal tubules in male rat kidneys. These results suggest strongly the functional divergence of two FABPs in the rat kidney.

CT Check Tags: Animal; Female; Male; Support, Non-U.S. Gov't
Amino Acid Sequence
*Carrier Proteins: ME, metabolism
Chromatography, Gel
Chromatography, High Pressure Liquid
Electrophoresis, Polyacrylamide Gel
Immunohistochemistry
*Kidney: ME, metabolism
Kidney: UL, ultrastructure
Microscopy, Electron
Molecular Sequence Data
Myocardium: ME, metabolism
Rats
Sequence Alignment
Sex Factors

CN 0 (fatty acid-binding proteins); 0 (Carrier Proteins)

ANSWER 7 OF 7 MEDLINE
 AN 91170283 MEDLINE
 DN 91170283
 TI Primary structure and cellular distribution of two fatty acid-binding proteins in adult rat kidneys.
 AU Kimura H; Odani S; Nishi S; Sato H; Arakawa M; Ono T
 CS Department of Biochemistry, Niigata University School of Medicine, Japan..
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1991 Mar 25) 266 (9) 5963-72.
 Journal code: HIV. ISSN: 0021-9258.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals; Cancer Journals
 EM 199106
 AB Fatty acid-binding proteins (FABPs) were purified from the kidneys of female and male rats and characterized by primary structure and histological distribution in the kidney. Two FABPs (14 and 15.5 kDa) were found in male rat kidney cytosol whereas only 14-kDa FABP could be recognized in female rat kidneys throughout the purification steps. The amino acid sequence of the 14-kDa FABP was identical to that of rat **heart** FABP deduced from the cDNA sequence (Heuckeroth, R. O., Birkenmeier, E. H., Levin, M. S., and Gordon, J. I. (1987) J. Biol. Chem. 262, 9709-9717). Structural analysis of the male-specific 15.5-kDa FABP identified this second FABP as a proteolytically modified form of alpha 2u-globulin, an 18.7-kDa **major urinary protein** of adult male rats (Unterman, R. D., Lynch, K. R., Nakhasi, H. L., dolan, K. P., Hamilton, J. W., Cohn, D. V., and Feigelson, P. (1981) Proc. Natl. Acad. Sci. U.S.A. 78, 3478-3482) which shares a common ancestry with a number of hydrophobic ligand-binding proteins such as serum retinol-binding proteins. Immunohistochemical investigation disclosed that **heart**-type FABP (14-kDa FABP) is localized in the cytoplasm of the epithelia of the distal tubules in both male and female rat kidneys whereas 15.5-kDa FABP immunostaining was observed predominantly in the endosomes or lysosomes of proximal tubules in male rat kidneys. These results suggest strongly the functional divergence of two FABPs in the rat kidney.
 CT Check Tags: Animal; Female; Male; Support, Non-U.S. Gov't
 Amino Acid Sequence
 *Carrier Proteins: ME, metabolism
 Chromatography, Gel
 Chromatography, High Pressure Liquid
 Electrophoresis, Polyacrylamide Gel
 Immunohistochemistry
 *Kidney: ME, metabolism
 Kidney: UL, ultrastructure
 Microscopy, Electron
 Molecular Sequence Data
 Myocardium: ME, metabolism
 Rats
 Sequence Alignment
 Sex Factors
 CN 0 (fatty acid-binding proteins); 0 (Carrier Proteins)

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Updated
Search
WC 4/14/03

L4 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2003 ACS
 AN 1999:359733 CAPLUS
 DN 130:349390
 TI Method for examining **kidney diseases**.
 IN Yamanouchi, Masaya; Honda, Akiko; Uchida, Hiromi; Sugaya, Takeshi; Kimura, Kenjiro
 PA Tanabe Seiyaku Co., Ltd., Japan
 SO PCT Int. Appl., 31 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 IC ICM G01N033-53
 CC 9-10 (Biochemical Methods)
 Section cross-reference(s): 14, 15

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9927363	A1	19990603	WO 1998-JP5319	19981126
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	JP 11242026	A2	19990907	JP 1998-331828	19981124
	JP 3259768	B2	20020225		
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	EP 1043587	A1	20001011	EP 1998-955936	19981126
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRAI	JP 1997-323684	A	19971126		
	WO 1998-JP5319	W	19981126		
AB	A diagnostic method is described for examg. kidney diseases by immunol. detecting a fatty acid-binding protein derived from kidney tissues contained in the specimen sampled from mammals other than rodents. This method can provide examn. results contg. information highly useful in diagnosing the prognosis of kidney diseases hardly obtained by the existing methods. Based on the results obtained by this method, an appropriate therapy can be selected by taking the risk concerning the prognosis into consideration. This method is applicable not only to kidney tissue samples, but also to urine samples, and therefore, the examn. can be conveniently and efficiently performed.				
ST	kidney disease diagnosis prognosis immunoassay				
IT	staining; fatty acid binding protein renal failure Proteins, specific or class RL: ANT (Analyte); BUU (Biological use, unclassified); PUR (Purification or recovery); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses) (FABP (fatty acid-binding protein); method for examg. kidney diseases)				
IT	Kidney, disease (IgA nephropathy; method for examg. kidney diseases)				
IT	Proteins, specific or class RL: ANT (Analyte); BUU (Biological use, unclassified); PUR (Purification or recovery); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses) (L-FABP (liver fatty acid-binding protein), human, mouse, rabbit; method for examg. kidney diseases)				
IT	Proteins, specific or class				

L4 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2003 ACS
 AN 1999:359733 CAPLUS
 DN 130:349390
 TI Method for examining **kidney diseases**.
 IN Yamanouchi, Masaya; Honda, Akiko; Uchida, Hiromi; Sugaya, Takeshi; Kimura, Kenjiro
 PA Tanabe Seiyaku Co., Ltd., Japan
 SO PCT Int. Appl., 31 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 IC ICM G01N033-53
 CC 9-10 (Biochemical Methods)
 Section cross-reference(s): 14, 15

FAN.CNT 1

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	JP 3259768	B2	20020225		
	AU 9912603	A1	19990615	AU 1999-12603	19981126
	EP 1043587	A1	20001011	EP 1998-955936	19981126
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRAI	JP 1997-323684	A	19971126		
	WO 1998-JP5319	W	19981126		
AB	A diagnostic method is described for examg. kidney diseases by immunol. detecting a fatty acid-binding protein derived from kidney tissues contained in the specimen sampled from mammals other than rodents. This method can provide examn. results contg. information highly useful in diagnosing the prognosis of kidney diseases hardly obtained by the existing methods. Based on the results obtained by this method, an appropriate therapy can be selected by taking the risk concerning the prognosis into consideration. This method is applicable not only to kidney tissue samples, but also to urine samples, and therefore, the examn. can be conveniently and efficiently performed.				
ST	kidney disease diagnosis prognosis immunoassay				
IT	staining; fatty acid binding protein renal failure Proteins, specific or class RL: ANT (Analyte); BUU (Biological use, unclassified); PUR (Purification or recovery); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses) (FABP (fatty acid-binding protein); method for examg. kidney diseases)				
IT	Kidney, disease (IgA nephropathy; method for examg. kidney diseases)				
IT	Proteins, specific or class RL: ANT (Analyte); BUU (Biological use, unclassified); PUR (Purification or recovery); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses) (L-FABP (liver fatty acid-binding protein), human, mouse, rabbit; method for examg. kidney diseases)				
IT	Proteins, specific or class				

RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
 (MUP (major urinary protein); method for examg. **kidney diseases**)

IT Antibodies
 RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (anti-mouse L-FABP, anti-mouse H-FABP, anti-human L-FABP;; method for examg. **kidney diseases**)

IT **Kidney**
 (distal tubule; method for examg. **kidney diseases**)

IT Immunoassay
 (enzyme-linked immunosorbent assay; method for examg. **kidney diseases**)

IT **Kidney, disease**
 (failure; method for examg. **kidney diseases**)

IT Basement membrane
 (glomerular; method for examg. **kidney diseases**)

IT Phosphoproteins
 RL: ANT (Analyte); BUU (Biological use, unclassified); PUR (Purification or recovery); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (h-FABP (heart fatty acid-binding protein), mouse; method for examg. **kidney diseases**)

IT Immunoassay
 (immunol. staining; method for examg. **kidney diseases**)

IT **Kidney, disease**
 (interstitial fibrosis; method for examg. **kidney diseases**)

IT Blood analysis
 Diagnosis
 Disease models
 Kidney
 Kidney, disease
 Mammal (Mammalia)
 Mouse
 Polyacrylamide gel electrophoresis
 Prognosis
 Rat
 Rodent
 Test kits
 Therapy
 Urine analysis
 (method for examg. **kidney diseases**)

IT **Kidney**
 (proximal tubule; method for examg. **kidney diseases**)

IT 9012-33-3, N-Acetyl-.beta.-D-glucosaminidase
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (method for examg. **kidney diseases**)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
 (1) Sumitomo Chemical Co, Ltd; JP 05-333025 A1 1993 CAPLUS
 (2) Uchida; Febs Lett 1995, V357(2), P165 CAPLUS

RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(MUP (major urinary protein); method for examg. **kidney diseases**)

IT **Antibodies**

RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(anti-mouse L-FABP, anti-mouse H-FABP, anti-human L-FABP;; method for examg. **kidney diseases**)

IT **Kidney**

(distal tubule; method for examg. **kidney diseases**)

IT **Immunoassay**

(enzyme-linked immunosorbent assay; method for examg. **kidney diseases**)

IT **Kidney, disease**

(failure; method for examg. **kidney diseases**)

IT **Basement membrane**

(glomerular; method for examg. **kidney diseases**)

IT **Phosphoproteins**

RL: ANT (Analyte); BUU (Biological use, unclassified); PUR (Purification or recovery); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(h-FABP (heart fatty acid-binding protein), mouse; method for examg. **kidney diseases**)

IT **Immunoassay**

(immunol. staining; method for examg. **kidney diseases**)

IT **Kidney, disease**

(interstitial fibrosis; method for examg. **kidney diseases**)

IT **Blood analysis**

Diagnosis

Disease models

Kidney

Kidney, disease

Mammal (Mammalia)

Mouse

Polyacrylamide gel electrophoresis

Prognosis

Rat

Rodent

Test kits

Therapy

Urine analysis

(method for examg. **kidney diseases**)

IT **Kidney**

(proximal tubule; method for examg. **kidney diseases**)

IT **9012-33-3, N-Acetyl-.beta.-D-glucosaminidase**

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(method for examg. **kidney diseases**)

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(2) Uchida; Febs Lett 1995, V357(2), P165 CAPLUS

L5 ANSWER 21 OF 23 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
 AN 1989:216021 BIOSIS
 DN BR36:105235
 TI ANALYSIS OF LIVER FATTY ACID BINDING
 PROTEIN IMMUNOREACTIVITY IN COLORECTAL ADENOCARCINOMAS AND
 ADENOMAS A COMPARISON WITH CARCINOMAS ARISING IN OTHER SITES.
 AU CARROLL S L; GORDON J I; ROTH K A
 CS DEP. PATHOL., WASHINGTON UNIV. SCH. MED., ST. LOUIS, MO., USA.
 SO ANNUAL MEETING OF THE UNITED STATES AND CANADIAN ACADEMY OF PATHOLOGY
 (UNITED STATES-CANADIAN DIVISION OF THE INTERNATIONAL ACADEMY OF
 PATHOLOGY), SAN FRANCISCO, CALIFORNIA, USA, MARCH 5-10, 1989. LAB INVEST.
 (1989) 60 (1), 15A.
 CODEN: LAINAW. ISSN: 0023-6837.
 DT Conference
 FS BR; OLD
 LA English
 CC General Biology - Symposia, Transactions and Proceedings of Conferences,
 Congresses, Review Annuals 00520
 Microscopy Techniques - Histology and Histochemistry 01056
 Comparative Biochemistry, General *10010
 Biochemical Studies - Proteins, Peptides and Amino Acids 10064
 Biochemical Studies - Lipids 10066
 Biophysics - Molecular Properties and Macromolecules 10506
 Anatomy and Histology, General and Comparative - Microscopic and
 Ultramicroscopic Anatomy *11108
 Pathology, General and Miscellaneous - Comparative *12503
 Pathology, General and Miscellaneous - Diagnostic 12504
 Metabolism - Lipids *13006
 Digestive System - Pathology *14006
 Urinary System and External Secretions - Pathology *15506
 Reproductive System - Pathology *16506
 Neoplasms and Neoplastic Agents - Diagnostic Methods *24001
 Neoplasms and Neoplastic Agents - Immunology *24003
 Neoplasms and Neoplastic Agents - Neoplastic Cell Lines *24005
 Neoplasms and Neoplastic Agents - Biochemistry *24006
 Developmental Biology - Embryology - Morphogenesis, General 25508
 Laboratory Animals - General 28002
 Immunology and Immunochemistry - General; Methods *34502
 BC Muridae 86375
 IT Miscellaneous Descriptors
 ABSTRACT MOUSE CELLULAR DIFFERENTIATION STOMACH BREAST KIDNEY
 ENDOMETRIUM IMMUNOSTAINING CANCER MARKER

L5 ANSWER 21 OF 23 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
 AN 1989:216021 BIOSIS
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 ENDOMETRIUM IMMUNOSTAINING CANCER MARKER

L5 ANSWER 19 OF 23 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
 6
 AN 1989:380867 BIOSIS
 DN BA88:61457
 TI DEVELOPMENTAL CHANGES IN THE EXPRESSION OF GENES INVOLVED IN CHOLESTEROL
 BIOSYNTHESIS AND LIPID TRANSPORT IN HUMAN AND RAT FETAL AND NEONATAL
 LIVERS.
 AU LEVIN M S; PITT A J A; SCHWARTZ A L; EDWARDS P A; GORDON J I
 CS DEP. MED., WASHINGTON UNIV. SCH. MED., 660 S. EUCLID AVE., BOX 8124, ST.
 LOUIS, MO 63110, USA.
 SO BIOCHIM BIOPHYS ACTA, (1989) 1003 (3), 293-300.
 CODEN: BBACAQ. ISSN: 0006-3002.
 FS BA; OLD
 LA English
 AB Cloned cDNAs encoding a number of enzymes involved in cholesterol
 biosynthesis as well as extracellular and intracellular lipid transport
 were used to compare the developmental maturation of these biologic
 functions in the fetal and neonatal rat and human liver. The results of
 RNA blot hybridization analyses indicate that steady-state levels of rat
 HMG-CoA synthase, HMG-CoA reductase and prenyl transferase mRNAs are
 highest in late fetal life and undergo precipitous (up to 80-fold)
 co-ordinate reductions immediately after parturition. These changes
 reflect the ability of the fetal rat liver to produce large quantities of
 cholesterol as well as the repression of this function during the suckling
 period in response to exogenous dietary cholesterol. Striking co-ordinate
 patterns of HMG-CoA synthase, reductase and prenyl-transferase mRNA
 accumulation were also observed in four extrahepatic rat tissues (brain,
 lung, intestine and **kidney**) during the perinatal period. The
 concentrations of the three mRNAs in the 8-week-old human fetal liver are
 similar to those observed throughout subsequent intrauterine development
 with less than 2-fold changes noted between the 8th through 25th weeks of
 gestation. Analysis of the levels of human apo AI, apo AII, apo B and
liver fatty acid binding
protein mRNAs during this period and in newborn liver specimens
 also indicated less than 2-3-fold changes. These observations suggest that
 the 8-week human liver has achieved a high degree of biochemical
 differentiation with respect to functions involved in lipid
 metabolism/transport which may be comparable to that present in 19-21 day
 fetal rat liver. Further analysis of human and rat fetal liver RNAs using
 cloned cDNAs should permit construction of a development time scale
 correlating hepatic biochemical differentiation to be constructed between
 these two mammalian species.
 CC Genetics and Cytogenetics - Animal *03506
 Genetics and Cytogenetics - Human *03508
 Comparative Biochemistry, General *10010
 Biochemical Methods - Lipids 10056
 Biochemical Methods - Sterols and Steroids 10057
 Biochemical Studies - Lipids *10066
 Biochemical Studies - Sterols and Steroids *10067
 Movement 12100
 Metabolism - Lipids *13006
 Metabolism - Sterols and Steroids *13008
 Developmental Biology - Embryology - Morphogenesis, General *25508
 BC Mammalia - Unspecified 85700
 Hominidae 86215
 Muridae 86375
 IT Miscellaneous Descriptors
 MAMMAL RNA COMPLEMENTARY DNA
 RN 57-88-5 (CHOLESTEROL)

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 DN BA88:61457
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 CC Genetics and Cytogenetics - Animal *03506
 Genetics and Cytogenetics - Human *03508
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 Biochemical Studies - Sterols and Steroids *10067
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 BC Mammalia - Unspecified 85700
 Hominidae 86215
 Muridae 86375
 IT Miscellaneous Descriptors
 MAMMAL RNA COMPLEMENTARY DNA
 RN 57-88-5 (CHOLESTEROL)

L5 ANSWER 17 OF 23 CAPLUS COPYRIGHT 2003 ACS
 AN 1992:647417 CAPLUS
 DN 117:247417
 TI Molecular identification of the liver- and the heart-type fatty acid-binding proteins in human and rat **kidney**. Use of the reverse transcriptase polymerase chain reaction
 AU Maatman, Ronald G. H. J.; Van de Westerlo, Els M. A.; Van Kuppevelt, Toin H. M. S. M.; Veerkamp, Jacques H.
 CS Dep. Biochem., Univ. Nijmegen, Nijmegen, 6500 HB, Neth.
 SO Biochemical Journal (1992), 288(1), 285-90
 CODEN: BIJOAK; ISSN: 0306-3275
 DT Journal
 LA English
 CC 6-3 (General Biochemistry)
 Section cross-reference(s): 13
 AB The cDNAs of 2 types of fatty acid-binding protein (FABP) present in human **kidney**, previously described as types A and B, were isolated using reverse transcriptase-PCR (RT-PCR) with human **kidney** mRNA and various sets of primers. The cDNA fragments were cloned and sequenced. Renal FABP type A and B cDNAs appeared to be completely identical to human liver- and heart-type FABP cDNAs, resp. The presence of liver-type FABP in rat **kidney** was demonstrated by chromatog., ELISA, and immunocytochem. The ratio and cellular distribution of the 2 FABP types varies markedly in human and rat **kidney**. RT-PCR permitted prepn. and identification of liver- and heart-type FABP cDNAs with mRNA from both male and female rat **kidney**.
 ST fatty acid binding protein type **kidney**; liver type FABP protein **kidney**; heart type FABP protein **kidney**
 IT **Kidney**, composition
 (fatty acid-binding proteins of, of human and other mammal, liver and heart types of)
 IT Proteins, specific or class
 RL: BIOL (Biological study)
 (L-FABP (**liver fatty acid-binding protein**), of **kidney**, of human and other mammal)
 IT Phosphoproteins
 RL: BIOL (Biological study)
 (h-FABP (heart fatty acid-binding protein), of **kidney**, of human and other mammal)

L5 ANSWER 17 OF 23 CAPLUS COPYRIGHT 2003 ACS
 AN 1992:647417 CAPLUS
 DN 117:247417
 TI Molecular identification of the liver- and the heart-type fatty acid-binding proteins in human and rat **kidney**. Use of the reverse transcriptase polymerase chain reaction
 AU Maatman, Ronald G. H. J.; Van de Westerlo, Els M. A.; Van Kuppevelt, Toin H. M. S. M.; Veerkamp, Jacques H.
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 CODEN: BIJOAK; ISSN: 0306-3275
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 CC 6-3 (General Biochemistry)
 Section cross-reference(s): 13
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 ST fatty acid binding protein type **kidney**; liver type FABP protein **kidney**; heart type FABP protein **kidney**
 IT **Kidney**, composition
 (fatty acid-binding proteins of, of human and other mammal, liver and heart types of)
 IT Proteins, specific or class
 RL: BIOL (Biological study)
 (L-FABP (liver fatty acid-binding protein), of **kidney**, of human and other mammal)
 IT Phosphoproteins
 RL: BIOL (Biological study)
 (h-FABP (heart fatty acid-binding protein), of **kidney**, of human and other mammal)

L5 ANSWER 15 OF 23 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
 4
 AN 1994:494184 BIOSIS
 DN PREV199497507184
 TI Studies on the efflux of heme from biological membranes.
 AU Liem, Heng H.; Noy, Noa; Muller-Eberhard, Ursula (1)
 CS (1) Dep. Pediatr./Hematol.-Oncol., Cornell Univ. Med. Coll., 525 E. 68th
 St. N-804, New York, NY 10021 USA
 SO Biochimica et Biophysica Acta, (1994) Vol. 1194, No. 2, pp. 264-270.
 ISSN: 0006-3002.
 DT Article
 LA English
 AB It is unknown how heme is distributed intracellularly from its site of
 synthesis in the mitochondria to other organelles. In previous work
 (Biochemistry 23, 3715, 1984) the transfer of heme from lipid bilayers to
 soluble proteins had been found to be independent of the recipient
 proteins' affinity for heme. Here, we investigated whether proteins are
 involved in the transfer of heme from biological membranes into aqueous
 media. We followed the release of 14C-labeled heme, from mitochondria
 preloaded with the heme, to BSA and found that only about 28% of the heme
 was extracted on the first wash. After the third wash 35-50% of the heme
 that had been partitioned into the membranes was extracted. Fourth and
 fifth washes with BSA or a cytosolic heme-binding protein (HBP, also known
 as **liver fatty acid binding**
protein) removed only insignificant amounts of 14C-labeled heme.
 Similarly, a large portion of the preloaded 14C-labeled heme could not be
 extracted from a variety of isolated membranes (inner and outer
 mitochondrial membranes, plasma membranes of liver cells, **kidney**
 cortex cells and erythrocyte membranes). By contrast, essentially all (14
 C)palmitate preloaded in biological membranes and all 14C-labeled heme
 preloaded in synthetic membranes was released to albumin (Biochemistry 23,
 3715, 1984). These observations suggest that, in general, heme associates
 with membrane components which can be distinguished into two compartments.
 One compartment releases its heme spontaneously, while another compartment
 binds heme so tightly that a specific process has to be evoked for its
 release.
 CC Cytology and Cytochemistry - Animal *02506
 Biochemical Studies - Proteins, Peptides and Amino Acids *10064
 Biochemical Studies - Porphyrins and Bile Pigments *10065
 Biophysics - Membrane Phenomena *10508
 Metabolism - Porphyrins and Bile Pigments *13013
 BC Muridae *86375
 IT Major Concepts
 Biochemistry and Molecular Biophysics; Cell Biology; Membranes (Cell
 Biology); Metabolism
 IT Chemicals & Biochemicals
 HEME
 IT Miscellaneous Descriptors
 BOVINE SERUM ALBUMIN; HEME TRANSFER; HEME-BINDING PROTEIN; MITOCHONDRIA
 ORGN Super Taxa
 Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia
 ORGN Organism Name
 rat (Muridae)
 ORGN Organism Superterms
 animals; chordates; mammals; nonhuman mammals; nonhuman vertebrates;
 rodents; vertebrates
 RN 14875-96-8 (HEME)

L5 ANSWER 15 OF 23 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
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 Biochemical Studies - Porphyrins and Bile Pigments *10065
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 BC Muridae *86375
 IT Major Concepts
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 Biology); Metabolism
 IT Chemicals & Biochemicals
 HEME
 IT Miscellaneous Descriptors
 BOVINE SERUM ALBUMIN; HEME TRANSFER; HEME-BINDING PROTEIN; MITOCHONDRIA
 ORGN Super Taxa
 Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia
 ORGN Organism Name
 rat (Muridae)
 ORGN Organism Superterms
 animals; chordates; mammals; nonhuman mammals; nonhuman vertebrates;
 rodents; vertebrates
 RN 14875-96-8 (HEME)

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 Biochemical Studies - Porphyrins and Bile Pigments *10065
 Biophysics - Membrane Phenomena *10508
 Metabolism - Porphyrins and Bile Pigments *13013
 BC Muridae *86375
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 Biology); Metabolism
 IT Chemicals & Biochemicals
 HEME
 IT Miscellaneous Descriptors
 BOVINE SERUM ALBUMIN; HEME TRANSFER; HEME-BINDING PROTEIN; MITOCHONDRIA
 ORGN Super Taxa
 Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia
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 rat (Muridae)
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 AU Liem, Heng H.; Noy, Noa; Muller-Eberhard, Ursula (1)
 CS (1) Dep. Pediatr./Hematol.-Oncol., Cornell Univ. Med. Coll., 525 E. 68th
 St. N-804, New York, NY 10021 USA
 SO Biochimica et Biophysica Acta, (1994) Vol. 1194, No. 2, pp. 264-270.
 ISSN: 0006-3002.
 DT Article
 LA English
 AB It is unknown how heme is distributed intracellularly from its site of
 synthesis in the mitochondria to other organelles. In previous work
 (Biochemistry 23, 3715, 1984) the transfer of heme from lipid bilayers to
 soluble proteins had been found to be independent of the recipient
 proteins' affinity for heme. Here, we investigated whether proteins are
 involved in the transfer of heme from biological membranes into aqueous
 media. We followed the release of 14C-labeled heme, from mitochondria
 preloaded with the heme, to BSA and found that only about 28% of the heme
 was extracted on the first wash. After the third wash 35-50% of the heme
 that had been partitioned into the membranes was extracted. Fourth and
 fifth washes with BSA or a cytosolic heme-binding protein (HBP, also known
 as **liver fatty acid binding**
protein) removed only insignificant amounts of 14C-labeled heme.
 Similarly, a large portion of the preloaded 14C-labeled heme could not be
 extracted from a variety of isolated membranes (inner and outer
 mitochondrial membranes, plasma membranes of liver cells, **kidney**
 cortex cells and erythrocyte membranes). By contrast, essentially all (14
 C)palmitate preloaded in biological membranes and all 14C-labeled heme
 preloaded in synthetic membranes was released to albumin (Biochemistry 23,
 3715, 1984). These observations suggest that, in general, heme associates
 with membrane components which can be distinguished into two compartments.
 One compartment releases its heme spontaneously, while another compartment
 binds heme so tightly that a specific process has to be evoked for its
 release.
 CC Cytology and Cytochemistry - Animal *02506
 Biochemical Studies - Proteins, Peptides and Amino Acids *10064
 Biochemical Studies - Porphyrins and Bile Pigments *10065
 Biophysics - Membrane Phenomena *10508
 Metabolism - Porphyrins and Bile Pigments *13013
 BC Muridae *86375
 IT Major Concepts
 Biochemistry and Molecular Biophysics; Cell Biology; Membranes (Cell
 Biology); Metabolism
 IT Chemicals & Biochemicals
 HEME
 IT Miscellaneous Descriptors
 BOVINE SERUM ALBUMIN; HEME TRANSFER; HEME-BINDING PROTEIN; MITOCHONDRIA
 ORGN Super Taxa
 Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia
 ORGN Organism Name
 rat (Muridae)
 ORGN Organism Superterms
 animals; chordates; mammals; nonhuman mammals; nonhuman vertebrates;
 rodents; vertebrates
 RN 14875-96-8 (HEME)

L5 ANSWER 13 OF 23 CAPLUS COPYRIGHT 2003 ACS
 AN 1997:325630 CAPLUS
 DN 127:3209
 TI Interaction of fatty acid-binding proteins with the peroxisome
 proliferator-activated receptor alpha. Evidence for FABP modulation of the
 gene response to fatty acid overload
 AU Bass, Nathan M.
 CS Department of Medicine, University of California, San Francisco, San
 Francisco, CA, 94143, USA
 SO Frontiers in Bioactive Lipids, [Proceedings of the Washington
 International Spring Symposium], 16th, Washington, D. C., May 6-9, 1996
 (1996), 67-72. Editor(s): Vanderhoek, Jack Y. Publisher: Plenum, New
 York, N. Y.
 CODEN: 64JQAR
 DT Conference; General Review
 LA English
 CC 13-0 (Mammalian Biochemistry)
 Section cross-reference(s): 6
 AB A review, with 38 refs., on the interaction between fatty acid-binding
 protein (FABP), most notably the liver form, and the activation of
 peroxisome proliferator-activated receptor alpha (PPAR.alpha.), the
 isotype of this family of nuclear receptors which is predominantly
 expressed in liver, **kidney** and heart muscle tissue.
 ST review fatty acid binding protein PPARalpha; peroxisome proliferator
 activated receptor FABP review
 IT Proteins, specific or class
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological
 process); BSU (Biological study, unclassified); BIOL (Biological study);
 PROC (Process)
 (FABP (fatty acid-binding protein); interaction of fatty acid-binding
 proteins with the peroxisome proliferator-activated receptor alpha)
 IT Proteins, specific or class
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological
 process); BSU (Biological study, unclassified); BIOL (Biological study);
 PROC (Process)
 (L-FABP (**liver fatty acid-binding**
protein); interaction of fatty acid-binding proteins with the
 peroxisome proliferator-activated receptor alpha)
 IT Gene
 (expression; interaction of fatty acid-binding proteins with the
 peroxisome proliferator-activated receptor alpha)
 IT Gene, animal
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological
 process); BSU (Biological study, unclassified); BIOL (Biological study);
 PROC (Process)
 (for peroxisome proliferator-activated receptor .alpha.; interaction of
 fatty acid-binding proteins with the peroxisome proliferator-activated
 receptor alpha)
 IT Liver
 (interaction of fatty acid-binding proteins with the peroxisome
 proliferator-activated receptor alpha)
 IT Albumins, biological studies
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological
 process); BSU (Biological study, unclassified); BIOL (Biological study);
 PROC (Process)
 (interaction of fatty acid-binding proteins with the peroxisome
 proliferator-activated receptor alpha)
 IT Fatty acids, biological studies
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
 (Biological study); PROC (Process)
 (interaction of fatty acid-binding proteins with the peroxisome
 proliferator-activated receptor alpha)
 IT Peroxisome proliferator-activated receptors
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological

L5 ANSWER 13 OF 23 CAPLUS COPYRIGHT 2003 ACS
 AN 1997:325630 CAPLUS
 DN 127:3209
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 ST review fatty acid binding protein PPARalpha; peroxisome proliferator
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 RL: BAC (Biological activity or effector, except adverse); BPR (Biological

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PROC (Process)
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process); BSU (Biological study, unclassified); BIOL (Biological study);
PROC (Process)
 (.alpha.; interaction of fatty acid-binding proteins with the
 peroxisome proliferator-activated receptor alpha)

L19 ANSWER 8 OF 9 MEDLINE
 AN 87079676 MEDLINE
 DN 87079676 PubMed ID: 3539534
 TI Control of 5-aminolevulinate synthase in animals.
 AU May B K; Borthwick I A; Srivastava G; Pirola B A; Elliott W H
 SO CURRENT TOPICS IN CELLULAR REGULATION, (1986) 28 233-62. Ref: 115
 Journal code: 2984740R. ISSN: 0070-2137.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 General Review; (REVIEW)
 LA English
 FS Priority Journals
 EM 198702
 ED Entered STN: 19900302
 Last Updated on STN: 19980206
 Entered Medline: 19870219
 AB The proposed mechanism by which hepatic ALV-synthase mitochondrial levels are regulated is outlined in Fig. 2. ALV-synthase catalyzes the first and rate-limiting step in the heme pathway and is normally present in low amounts. A cytosolic, regulatory free heme pool tightly controls the amount of ALV-synthase in two ways. In the primary mechanism of regulation, heme is proposed to inhibit the synthesis of ALV-synthase mRNA. Most likely this would be mediated through the action of specific **heme-binding protein(s)** which recognize regulatory control regions of the ALV-synthase gene. Gene activity therefore is significantly repressed most of the time. When there is an increased demand for heme by newly synthesized cellular hemoproteins, the free heme pool is reduced, leading to a derepression of ALV-synthase mRNA synthesis. Once the need for increased heme synthesis is satisfied, inhibitory heme levels build up again. When drugs such as phenobarbital are administered to animals, there is a rapid induction in the liver of both cytochrome P-450 and ALV-synthase. It is proposed that the heme pool governing ALV-synthase levels is lowered by the increased heme demand due to cytochrome P-450 apoprotein formation. The primary event in the drug induction of ALV-synthase is therefore the increased synthesis of cytochrome P-450 apoprotein. However, the mechanism by which this occurs is unknown, although drugs do increase the synthesis of mRNA for cytochrome P-450 (Fig. 2). (There is evidence that for the aromatic hydrocarbons a specific cytosolic receptor exists.) In the acute hepatic porphyria **diseases**, uncontrolled synthesis of hepatic ALV-synthase occurs. The various forms are characterized by reduced levels of one of the heme pathway enzymes other than ALV-synthase. Attacks of the **disease** are commonly precipitated by drugs which induce cytochrome P-450, and the uncontrolled accumulation of ALV-synthase which accompanies these attacks results from the combined action of the block in the heme pathway and the increased cytochrome P-450 levels. A major challenge which now exists is to understand at the molecular level how the genes for ALV-synthase and cytochrome P-450 are regulated in the liver and other tissues. (ABSTRACT TRUNCATED AT 400 WORDS)
 CT Check Tags: Animal; **Human**
 *5-Aminolevulinate Synthetase: ME, metabolism
 Cytosol: EN, enzymology
 Heme: ME, metabolism
 Liver: EN, enzymology
 Mitochondria: EN, enzymology
 Mitochondria, Liver: EN, enzymology
 Porphyria: EN, enzymology
 Reticulocytes: EN, enzymology
 RN 14875-96-8 (Heme)
 CN EC 2.3.1.37 (5-Aminolevulinate Synthetase)

L19 ANSWER 8 OF 9 MEDLINE
 AN 87079676 MEDLINE
 DN 87079676 PubMed ID: 3539534
 TI Control of 5-aminolevulinate synthase in animals.
 AU May B K; Borthwick I A; Srivastava G; Pirola B A; Elliott W H
 SO CURRENT TOPICS IN CELLULAR REGULATION, (1986) 28 233-62. Ref: 115
 Journal code: 2984740R. ISSN: 0070-2137.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 General Review; (REVIEW)
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 CT Check Tags: Animal; **Human**
 *5-Aminolevulinate Synthetase: ME, metabolism
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 Heme: ME, metabolism
 Liver: EN, enzymology
 Mitochondria: EN, enzymology
 Mitochondria, Liver: EN, enzymology
 Porphyria: EN, enzymology
 Reticulocytes: EN, enzymology
 RN 14875-96-8 (Heme)
 CN EC 2.3.1.37 (5-Aminolevulinate Synthetase)

L19 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2003 ACS
 AN 1966:61948 CAPLUS
 DN 64:61948
 OREF 64:11636g-h
 TI Plasma hematin binding and clearance in the rhesus monkey
 AU Sears, David A.; Huser, Hans Juerg
 CS Walter Reed Army Inst. of Res., Washington, DC
 SO Proc. Soc. Exptl. Biol. Med. (1966), 121(1), 111-16
 DT Journal
 LA English
 CC 65 (Mammalian Biochemistry)
 AB In vitro and in vivo expts. demonstrated that protein binding of hematin (prepd. from **human** erythrocytes) in rhesus monkey plasma was similar to that in **human** plasma. After intravenous injection, the pigment was bound primarily by albumin and .beta.-globulin, and possibly to some extent also by .alpha.-globulin. The disappearance of the complexes from the plasma was traced, and studies with hematin-59Fe implicated the liver as the primary site of removal of injected hematin. Depletion of the **heme-binding protein** was observed after hematin injection. The value of the monkey as an exptl. model for studies of hematin binding and the possible implications for **human** hemolytic **disease** are discussed. 29 references.
 IT Proteins
 (blood-plasma, hematin complex, liver clearance and)
 IT Liver
 (hematin removal from blood plasma by)
 IT Hematins
 (protein complex, in blood plasma, liver clearance of)

L19 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2003 ACS

AN 1966:61948 CAPLUS

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TI Plasma hematin binding and clearance in the rhesus monkey

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IT Proteins

(blood-plasma, hematin complex, liver clearance and)

IT Liver

(hematin removal from blood plasma by)

IT Hematins

(protein complex, in blood plasma, liver clearance of)

L31 ANSWER 25 OF 45 MEDLINE
 AN 92399400 MEDLINE
 DN 92399400 PubMed ID: 1525132
 TI [Genetic diseases of **lipid storage** and related disorders].
 Genetisch bedingte Lipidstoffwechselstörungen und Grenzgebiete.
 AU Kunnert B
 CS Institut für Pathologische Anatomie, Universität Leipzig, Deutschland.
 SO ZENTRALBLATT FÜR PATHOLOGIE, (1992 Jun) 138 (3) 168-208. Ref: 359
 Journal code: 9105594. ISSN: 0863-4106.
 CY GERMANY: Germany, Federal Republic of
 DT Journal; Article; (JOURNAL ARTICLE)
 General Review; (REVIEW)
 (REVIEW, ACADEMIC)
 LA German
 FS Priority Journals
 EM 199210
 ED Entered STN: 19921106
 Last Updated on STN: 19921106
 Entered Medline: 19921022
 AB A general account is given in this paper of genetic disorders of lipid metabolism so far known together with marginally related lesions with particular reference being made to amino acid metabolism. Somewhat closer attention is given, in this context, to pathologico-anatomic findings.
 CT Check Tags: Animal; **Human**
 Biopsy
 Cholesterol Esters: ME, metabolism
 Chromatography: MT, methods
 English Abstract
Kidney: ME, metabolism
Kidney: PA, pathology
 *Lipid Metabolism, Inborn Errors: DI, diagnosis
 Lipid Metabolism, Inborn Errors: PA, pathology
 Lipids: AN, analysis
Liver: ME, metabolism
 Lysosomes: ME, metabolism
 Mitochondria: ME, metabolism
 Myocardium: ME, metabolism
 Myocardium: PA, pathology
 Rats
 Sterols: ME, metabolism
 Triglycerides: ME, metabolism
 CN 0 (Cholesterol Esters); 0 (Lipids); 0 (Sterols); 0 (Triglycerides)

L31 ANSWER 25 OF 45 MEDLINE
 AN 92399400 MEDLINE
 DN 92399400 PubMed ID: 1525132
 TI [Genetic diseases of **lipid storage** and related disorders].
 Genetisch bedingte Lipidstoffwechselstörungen und Grenzgebiete.
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 CT Check Tags: Animal; **Human**
 Biopsy
 Cholesterol Esters: ME, metabolism
 Chromatography: MT, methods
 English Abstract
Kidney: ME, metabolism
Kidney: PA, pathology
 *Lipid Metabolism, Inborn Errors: DI, diagnosis
 Lipid Metabolism, Inborn Errors: PA, pathology
 Lipids: AN, analysis
Liver: ME, metabolism
 Lysosomes: ME, metabolism
 Mitochondria: ME, metabolism
 Myocardium: ME, metabolism
 Myocardium: PA, pathology
 Rats
 Sterols: ME, metabolism
 Triglycerides: ME, metabolism
 CN 0 (Cholesterol Esters); 0 (Lipids); 0 (Sterols); 0 (Triglycerides)

(FILE 'HOME' ENTERED AT 11:40:58 ON 23 DEC 2002)

FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, CANCERLIT' ENTERED AT 11:41:29 ON
23 DEC 2002

L1 1126 S (LIVER FATTY ACID BINDING PROTEIN)
L2 2 S L1 AND (KIDNEY DISEASE)
L3 1 S L1 AND NEPHRITIS
L4 749 S (L-FABP)
L5 0 S LIDNEY DISEASE
L6 131547 S KIDNEY DISEASE
L7 4 S L4 AND L6
L8 50 S L1 AND ANTIBOD?
L9 299 S L1 AND HUMAN?
L10 23 S L9 AND KIDNEY?
L11 4 S L8 AND L10
L12 4 DUPLICATE REMOVE L11 (0 DUPLICATES REMOVED)
L13 55 S L1 AND DISEASE
L14 3 S L13 AND ANTIBOD?

FILE 'STNGUIDE' ENTERED AT 12:25:27 ON 23 DEC 2002

L15 0 S L1 AND KIDNEY?

FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, CANCERLIT' ENTERED AT 12:29:02 ON
23 DEC 2002

L16 120 S L1 AND KIDNEY?
L17 25 S L16 AND DISEASE?
L18 21 DUPLICATE REMOVE L17 (4 DUPLICATES REMOVED)
L19 3 S L18 AND ANTIBOD?
L20 1126 S 'LIVER FATTY ACID BINDING PROTEIN'
L21 40 S L20 AND KIDNEY?
L22 4 S L21 AND ANTIBOD?
L23 2 S L21 AND DISEASE
L24 4 DUPLICATE REMOVE L22 (0 DUPLICATES REMOVED)
L25 3 S L24 NOT L23
L26 252 S 'LIPID STORAGE' AND KIDNEY?
L27 137 S L26 AND HUMAN?
L28 1 S L27 AND FABP?
L29 62 S L27 AND LIVER
L30 0 S L29 AND ANTIBOD?
L31 45 DUPLICATE REMOVE L29 (17 DUPLICATES REMOVED)
L32 13 S (KIDNEY DISEASE) AND FABP
L33 3 S L32 AND LIPID?

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L1 1126 S (LIVER FATTY ACID BINDING PROTEIN)
L2 2 S L1 AND (KIDNEY DISEASE)
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L7 4 S L4 AND L6
L8 50 S L1 AND ANTIBOD?
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L10 23 S L9 AND KIDNEY?
L11 4 S L8 AND L10
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L16 120 S L1 AND KIDNEY?
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L18 21 DUPLICATE REMOVE L17 (4 DUPLICATES REMOVED)
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L20 1126 S 'LIVER FATTY ACID BINDING PROTEIN'
L21 40 S L20 AND KIDNEY?
L22 4 S L21 AND ANTIBOD?
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L27 137 S L26 AND HUMAN?
L28 1 S L27 AND FABP?
L29 62 S L27 AND LIVER
L30 0 S L29 AND ANTIBOD?
L31 45 DUPLICATE REMOVE L29 (17 DUPLICATES REMOVED)
L32 13 S (KIDNEY DISEASE) AND FABP
L33 3 S L32 AND LIPID?

=>

L14 ANSWER 3 OF 3 MEDLINE
 AN 91094806 MEDLINE
 DN 91094806 PubMed ID: 2266963
 TI **Liver fatty acid-binding protein** in two cases of human lipid storage.
 AU Vergani L; Fanin M; Martinuzzi A; Galassi A; Appi A; Carrozzo R; Rosa M; Angelini C
 CS Department of Neurology, University of Padova, Italy.
 SO MOLECULAR AND CELLULAR BIOCHEMISTRY, (1990 Oct 15-Nov 8) 98 (1-2) 225-30.
 Journal code: 0364456. ISSN: 0300-8177.
 CY Netherlands
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199102
 ED Entered STN: 19910322
 Last Updated on STN: 19980206
 Entered Medline: 19910211
 AB FABPs in the various tissues play an important role in the intracellular fatty acid transport and metabolism. Reye's syndrome (RS) and multisystemic lipid storage (MLS) are human disorders characterized by a disturbance of lipid metabolism of unknown etiology. We investigated for the first time L-FABP in these two conditions. Affinity purified **antibodies** against chicken L-FABP were raised in rabbits, and found to cross-react specifically with partially purified human L-FABP. L-FABP content in liver samples of two patients with RS and MLS was investigated by immuno-histochemistry, SDS-PAGE and ELISA. L-FABP immuno-histochemistry showed increased reactivity in the liver of RS patient and normal reactivity in MLS liver. L-FABP increase in RS liver was confirmed by densitometry of SDS-PAGE and ELISA method. By these two methods the increase amounted to 180% and 199% (p less than 0.02), respectively, as compared to controls. A possible role of L-FABP in the pathogenesis of RS is discussed.
 CT Check Tags: Animal; Case Report; Female; Human; Male
 Adolescence
Antibodies: IM, immunology
 Carrier Proteins: IM, immunology
 *Carrier Proteins: ME, metabolism
 Chickens
 Enzyme-Linked Immunosorbent Assay
 *Lipid Metabolism, Inborn Errors: ME, metabolism
 Lipid Metabolism, Inborn Errors: PA, pathology
 Liver: UL, ultrastructure
Liver Diseases: CO, complications
***Liver Diseases: ME, metabolism**
Liver Diseases: PA, pathology
 Middle Age
 Reye Syndrome: ET, etiology
 *Reye Syndrome: ME, metabolism
 Reye Syndrome: PA, pathology
 CN 0 (**Antibodies**); 0 (Carrier Proteins); 0 (fatty acid-binding proteins)

=> FIL STNGUIDE

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
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FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Dec 20, 2002 (20021220/UP) .

=>

L8 ANSWER 12 OF 19 CAPLUS COPYRIGHT 2002 ACS
 AN 1997:325630 CAPLUS
 DN 127:3209
 TI Interaction of fatty acid-binding proteins with the peroxisome
 proliferator-activated receptor alpha. Evidence for FABP modulation of the
 gene response to fatty acid overload
 AU Bass, Nathan M.
 CS Department of Medicine, University of California, San Francisco, San
 Francisco, CA, 94143, USA
 SO Frontiers in Bioactive Lipids, [Proceedings of the Washington
 International Spring Symposium], 16th, Washington, D. C., May 6-9, 1996
 (1996), 67-72. Editor(s): Vanderhoek, Jack Y. Publisher: Plenum, New
 York, N. Y.
 CODEN: 64JQAR
 DT Conference; General Review
 LA English
 CC 13-0 (Mammalian Biochemistry)
 Section cross-reference(s): 6
 AB A review, with 38 refs., on the interaction between fatty acid-binding
 protein (FABP), most notably the liver form, and the activation of
 peroxisome proliferator-activated receptor alpha (PPAR.alpha.), the
 isotype of this family of nuclear receptors which is predominantly
 expressed in liver, **kidney** and heart muscle tissue.
 ST review fatty acid binding protein PPARalpha; peroxisome proliferator
 activated receptor FABP review
 IT Proteins, specific or class
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological
 process); BSU (Biological study, unclassified); BIOL (Biological study);
 PROC (Process)
 (FABP (fatty acid-binding protein); interaction of fatty acid-binding
 proteins with the peroxisome proliferator-activated receptor alpha)
 IT Proteins, specific or class
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological
 process); BSU (Biological study, unclassified); BIOL (Biological study);
 PROC (Process)
 (L-FABP (liver fatty acid-binding protein);
 interaction of fatty acid-binding proteins with the peroxisome
 proliferator-activated receptor alpha)
 IT Gene
 (expression; interaction of fatty acid-binding proteins with the
 peroxisome proliferator-activated receptor alpha)
 IT Gene, animal
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological
 process); BSU (Biological study, unclassified); BIOL (Biological study);
 PROC (Process)
 (for peroxisome proliferator-activated receptor .alpha.; interaction of
 fatty acid-binding proteins with the peroxisome proliferator-activated
 receptor alpha)
 IT Liver
 (interaction of fatty acid-binding proteins with the peroxisome
 proliferator-activated receptor alpha)
 IT Albumins, biological studies
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological
 process); BSU (Biological study, unclassified); BIOL (Biological study);
 PROC (Process)
 (interaction of fatty acid-binding proteins with the peroxisome
 proliferator-activated receptor alpha)
 IT Fatty acids, biological studies
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
 (Biological study); PROC (Process)
 (interaction of fatty acid-binding proteins with the peroxisome
 proliferator-activated receptor alpha)
 IT Peroxisome proliferator-activated receptors
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological

L8 ANSWER 12 OF 19 CAPLUS COPYRIGHT 2002 ACS
 AN 1997:325630 CAPLUS
 DN 127:3209
 TI Interaction of fatty acid-binding proteins with the peroxisome
 proliferator-activated receptor alpha. Evidence for FABP modulation of the
 gene response to fatty acid overload
 AU Bass, Nathan M.
 CS Department of Medicine, University of California, San Francisco, San
 Francisco, CA, 94143, USA
 SO Frontiers in Bioactive Lipids, [Proceedings of the Washington
 International Spring Symposium], 16th, Washington, D. C., May 6-9, 1996
 (1996), 67-72. Editor(s): Vanderhoek, Jack Y. Publisher: Plenum, New
 York, N. Y.
 CODEN: 64JQAR
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 Section cross-reference(s): 6
 AB A review, with 38 refs., on the interaction between fatty acid-binding
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 peroxisome proliferator-activated receptor alpha (PPAR.alpha.), the
 isotype of this family of nuclear receptors which is predominantly
 expressed in liver, **kidney** and heart muscle tissue.
 ST review fatty acid binding protein PPARalpha; peroxisome proliferator
 activated receptor FABP review
 IT Proteins, specific or class
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological
 process); BSU (Biological study, unclassified); BIOL (Biological study);
 PROC (Process)
 (FABP (fatty acid-binding protein); interaction of fatty acid-binding
 proteins with the peroxisome proliferator-activated receptor alpha)
 IT Proteins, specific or class
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological
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 (**L-FABP** (liver fatty acid-binding protein);
 interaction of fatty acid-binding proteins with the peroxisome
 proliferator-activated receptor alpha)
 IT Gene
 (expression; interaction of fatty acid-binding proteins with the
 peroxisome proliferator-activated receptor alpha)
 IT Gene, animal
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological
 process); BSU (Biological study, unclassified); BIOL (Biological study);
 PROC (Process)
 (for peroxisome proliferator-activated receptor .alpha.; interaction of
 fatty acid-binding proteins with the peroxisome proliferator-activated
 receptor alpha)
 IT Liver
 (interaction of fatty acid-binding proteins with the peroxisome
 proliferator-activated receptor alpha)
 IT Albumins, biological studies
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological
 process); BSU (Biological study, unclassified); BIOL (Biological study);
 PROC (Process)
 (interaction of fatty acid-binding proteins with the peroxisome
 proliferator-activated receptor alpha)
 IT Fatty acids, biological studies
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
 (Biological study); PROC (Process)
 (interaction of fatty acid-binding proteins with the peroxisome
 proliferator-activated receptor alpha)
 IT Peroxisome proliferator-activated receptors
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological

process); BSU (Biological study, unclassified); BIOL (Biological study);
PROC (Process)
 (.alpha.; interaction of fatty acid-binding proteins with the
 peroxisome proliferator-activated receptor alpha)

process); BSU (Biological study, unclassified); BIOL (Biological study);
PROC (Process)
 (.alpha.; interaction of fatty acid-binding proteins with the
 peroxisome proliferator-activated receptor alpha)

updated search W/Cool/C 10/14/05

L2 ANSWER 4 OF 6 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
DUPLICATE 1
AN 1997:226296 BIOSIS
DN PREV199799518012
TI Suppressor and activator functions mediated by a repeated heptad sequence
in the **liver fatty acid-binding**
protein gene (Fabpl.
AU Simon, Theodore C.; Cho, Alex; Tso, Patrick; Gordon, Jeffrey I. (1)
CS (1) Dep. Molecular Biol. Pharmacol., Box 8103, Washington Univ. Sch. Med.,
660 South Euclid Ave., St. Louis, MO 63110 USA
SO Journal of Biological Chemistry, (1997) Vol. 272, No. 16, pp. 10652-10663.
ISSN: 0021-9258. April 1997
DT Article
LA English
AB A 35-nucleotide sequence in the **liver fatty**
acid-binding protein gene (Fabpl) has been
identified that interacts with nuclear proteins present in adult mouse
liver, kidney, stomach, small intestine, and colon. The binding site
consists of a direct heptad repeat (TTCTGNNTT) separated by five
nucleotides. Both heptads are required for formation of stable complexes
with nuclear proteins in gel mobility shift assays. The in vivo functions
mediated by the repeats were determined by comparing the expression of
four Fabpl/human growth hormone fusion genes in multiple pedigrees of
adult transgenic mice. The transgenes contained (i) nucleotides -596 to
+21 of Fabpl linked to the human growth hormone reporter, (ii) 4
additional copies of the 35-base pair element placed at nucleotide -596 of
Fabpl, (iii) 4 additional copies of the sequence placed just upstream of
its endogenous site at nucleotide -132, and (iv) a sequence identical to
(iii) but with all heptad repeats mutated within each of the 4 additional
copies of the 35-base pair element. Transgene expression was defined by
RNA blot hybridizations and by light and electron microscopic
immunohistochemistry. The heptad repeat functions to suppress expression
in tubular epithelial cells of the proximal nephron, in hepatocytes, in
the mucus-producing pit cells of the gastric epithelium, and in absorptive
enterocytes located in the proximal small intestine. There is a gradient
of escape from enterocytic suppression as one moves from the proximal to
distal small intestine. This escape progresses to involve successively
less differentiated cells located closer and closer to the stem cell zone
in crypts of Lieberkuhn. The heptad repeat activates gene expression in
the colonic epithelium so that all proliferating and nonproliferating
cells in colonic crypts distributed from the cecum to the rectum support
transgene expression. The heptad has no obvious sequence similarities to
known transcription factor binding sites, suggesting that mediators of its
in vivo activities are likely to be novel. One candidate factor is a
90-kDa protein identified in Southwestern blots. The 90-kDa protein also
binds to an element in the matrix metalloproteinase-2 gene that functions
as an enhancer in **renal** cells, shares sequence homology with the
heptad, and generates similar-sized complexes in gel mobility shift assays
as the Fabpl repeat. The heptad repeat represents a target for identifying
transcription factors that regulate gene expression between gut and
renal epithelia and that also regulate the differentiation program
of the intestine's principal epithelial lineage as a function of its
location along the duodenal-colonic axis. Finally, the Fabpl regulatory
elements described in this report should be useful for delivering a
variety of gene products throughout the colonic epithelium of transgenic
mice.
CC Genetics and Cytogenetics - Animal *03506
Biochemical Studies - General *10060
Digestive System - General; Methods *14001
Urinary System and External Secretions - General; Methods *15501
BC Muridae. *86375
IT Major Concepts

renal = kidney.

Biochemistry and Molecular Biophysics; Digestive System (Ingestion and Assimilation); Genetics; Urinary System (Chemical Coordination and Homeostasis)

IT Sequence Data

nucleotide sequence

IT Miscellaneous Descriptors

ACTIVATOR FUNCTIONS; ADULT; COLONIC EPITHELIAL CELLS; DIGESTIVE SYSTEM; EXCRETORY SYSTEM; FABPL; FABPL REGULATORY ELEMENTS; **LIVER**

FATTY ACID-BINDING PROTEIN GENE;

MATRIX METALLOPROTEINASE-2; MOLECULAR GENETICS; **RENAL**

EPITHELIAL CELLS; REPEATED HEPTAD SEQUENCE; SMALL INTESTINAL EPITHELIAL CELLS; SUPPRESSOR FUNCTIONS; TRANSCRIPTION FACTORS; TRANSGENE

EXPRESSION; TRANSGENIC MOUSE

ORGN Super Taxa

Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name

Muridae (Muridae)

ORGN Organism Superterms

animals; chordates; mammals; nonhuman vertebrates; nonhuman mammals; rodents; vertebrates

2 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1992:647417 CAPLUS
 DN 117:247417
 TI Molecular identification of the liver- and the heart-type fatty
 acid-binding proteins in human and rat kidney. Use of the reverse
 transcriptase polymerase chain reaction
 AU Maatman, Ronald G. H. J.; Van de Westerloo, Els M. A.; Van Kuppevelt, Toin
 H. M. S. M.; Veerkamp, Jacques H.
 CS Dep. Biochem., Univ. Nijmegen, Nijmegen, 6500 HB, Neth.
 SO Biochemical Journal (1992), 288(1), 285-90
 CODEN: BIJOAK; ISSN: 0306-3275
 DT Journal
 LA English
 CC 6-3 (General Biochemistry)
 Section cross-reference(s): 13
 AB The cDNAs of 2 types of fatty acid-binding protein (FABP) present in human
 kidney, previously described as types A and B, were isolated using reverse
 transcriptase-PCR (RT-PCR) with human kidney mRNA and various sets of
 primers. The cDNA fragments were cloned and sequenced. **Renal**
 FABP type A and B cDNAs appeared to be completely identical to human
 liver- and heart-type FABP cDNAs, resp. The presence of liver-type FABP
 in rat kidney was demonstrated by chromatog., ELISA, and immunocytochem.
 The ratio and cellular distribution of the 2 FABP types varies markedly in
 human and rat kidney. RT-PCR permitted prepn. and identification of
 liver- and heart-type FABP cDNAs with mRNA from both male and female rat
 kidney.
 ST fatty acid binding protein type kidney; liver type FABP protein kidney;
 heart type FABP protein kidney
 IT Kidney, composition
 (fatty acid-binding proteins of, of human and other mammal, liver and
 heart types of)
 IT Proteins, specific or class
 RL: BIOL (Biological study)
 (L-FABP (**liver fatty acid-binding**
protein), of kidney, of human and other mammal)
 IT Phosphoproteins
 RL: BIOL (Biological study)
 (h-FABP (heart fatty acid-binding protein), of kidney, of human and
 other mammal)

QP501.347m
 1992-1983

cells in colonic crypts distributed from the cecum to the rectum support transgene expression. The heptad has no obvious sequence similarities to known transcription factor binding sites, suggesting that mediators of its in vivo activities are likely to be novel. One candidate factor is a 90-kDa protein identified in Southwestern blots. The 90-kDa protein also binds to an element in the matrix metalloproteinase-2 gene that functions as an enhancer in renal cells, shares sequence homology with the heptad, and generates similar-sized complexes in gel mobility shift assays as the Fabp1 repeat. The heptad repeat represents a target for identifying transcription factors that regulate gene expression between gut and renal epithelia and that also regulate the differentiation program of the intestine's principal epithelial lineage as a function of its location along the duodenal-colonic axis. Finally, the Fabp1 regulatory elements described in this report should be useful for delivering a variety of gene products throughout the colonic epithelium of transgenic mice.

CC Genetics and Cytogenetics - Animal *03506
 Biochemical Studies - General *10060
 Digestive System - General; Methods *14001
 Urinary System and External Secretions - General; Methods *15501

BC Muridae *86375

IT Major Concepts
 Biochemistry and Molecular Biophysics; Digestive System (Ingestion and Assimilation); Genetics; Urinary System (Chemical Coordination and Homeostasis)

IT Sequence Data
 nucleotide sequence

IT Miscellaneous Descriptors
 ACTIVATOR FUNCTIONS; ADULT; COLONIC EPITHELIAL CELLS; DIGESTIVE SYSTEM; EXCRETORY SYSTEM; FABPL; FABPL REGULATORY ELEMENTS; **LIVER**
FATTY ACID-BINDING PROTEIN GENE;
 MATRIX METALLOPROTEINASE-2; MOLECULAR GENETICS; RENAL EPITHELIAL CELLS; REPEATED HEPTAD SEQUENCE; SMALL INTESTINAL EPITHELIAL CELLS; SUPPRESSOR FUNCTIONS; TRANSCRIPTION FACTORS; TRANSGENE EXPRESSION; TRANSGENIC MOUSE

ORGN Super Taxa
 Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
 Muridae (Muridae)

ORGN Organism Superterms
 animals; chordates; mammals; nonhuman vertebrates; nonhuman mammals; rodents; vertebrates

L3 ANSWER 12 OF 23 MEDLINE on STN

AN 96195889 MEDLINE

DN 96195889 PubMed ID: 8620565

TI Decreased glutathione peroxidase activity in mice in response to nafenopin is caused by changes in selenium metabolism.

AU Garberg P; Thullberg M

CS National Institute of Occupational Health, Department of Toxicology, Solna, Sweden.

SO CHEMICO-BIOLOGICAL INTERACTIONS, (1996 Jan 5) 99 (1-3) 165-77.
 Journal code: 0227276. ISSN: 0009-2797.

CY Ireland

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199606

ED Entered STN: 19960627
 Last Updated on STN: 19960627
 Entered Medline: 19960619

AB The activity of selenium-dependent glutathione peroxidase is known to be reduced in the liver of both rats and mice after exposure to nafenopin, as

well as other peroxisome proliferators. The mechanism for this down-regulation is not known, but might involve changes in incorporation of selenium into selenoproteins. In this paper we show that both incorporation of selenium into selenoproteins and the level of selenium in liver is reduced in mice treated with nafenopin. The activity of selenium dependent glutathione peroxidase (GPx), as well as incorporation of selenium into its 23 kD subunit were found to be decreased. Contrary to what might have been expected, the decreased GPx activity was detected concomitantly with a slight increase in mRNA levels after 10 days of treatment, while a small decrease in mRNA levels was detected in treated animals after 26 weeks, together with the decrease in GPx-activity.

Incorporation of selenium into **liver fatty**

acid binding protein (L-FABP) was also

decreased, even though large increases in protein and mRNA levels were detected. Taken together these data suggest that the decrease in GPx-activity in response to nafenopin is due to post-transcriptional mechanisms, involving changes in selenium metabolism.

CT

Check Tags: Animal; Male

Blotting, Northern

Body Weight: DE, drug effects

Carrier Proteins: ME, metabolism

*Glutathione Peroxidase: ME, metabolism

Kidney: CH, chemistry

Kidney: DE, drug effects

Kidney: ME, metabolism

Liver: CH, chemistry

Liver: DE, drug effects

Liver: ME, metabolism

Mice

Mice, Inbred Strains

Microbodies: DE, drug effects

Microbodies: ME, metabolism

Myelin P2 Protein: ME, metabolism

*Nafenopin: PD, pharmacology

Organ Weight: DE, drug effects

Oxidation-Reduction

Proteins: ME, metabolism

RNA, Messenger: ME, metabolism

*Selenium: ME, metabolism

Testis: CH, chemistry

Testis: DE, drug effects

Testis: ME, metabolism

RN

3771-19-5 (Nafenopin); 7782-49-2 (Selenium)

CN

0 (Carrier Proteins); 0 (Myelin P2 Protein); 0 (Proteins); 0 (RNA, Messenger); 0 (fatty acid-binding proteins); EC 1.11.1.9 (Glutathione Peroxidase)

L3

ANSWER 13 OF 23 CAPLUS COPYRIGHT 2003 ACS on STN

AN

1997:325630 CAPLUS

DN

127:3209

TI

Interaction of fatty acid-binding proteins with the peroxisome proliferator-activated receptor alpha. Evidence for FABP modulation of the gene response to fatty acid overload

AU

Bass, Nathan M.

CS

Department of Medicine, University of California, San Francisco, San Francisco, CA, 94143, USA

SO

Frontiers in Bioactive Lipids, [Proceedings of the Washington International Spring Symposium], 16th, Washington, D. C., May 6-9, 1996 (1996), 67-72. Editor(s): Vanderhoek, Jack Y. Publisher: Plenum, New York, N. Y.

CODEN: 64JQAR

DT

Conference; General Review

LA English
CC 13-0 (Mammalian Biochemistry)
Section cross-reference(s): 6

AB A review, with 38 refs., on the interaction between fatty acid-binding protein (FABP), most notably the liver form, and the activation of peroxisome proliferator-activated receptor alpha (PPAR.alpha.), the isotype of this family of nuclear receptors which is predominantly expressed in liver, **kidney** and heart muscle tissue.

ST review fatty acid binding protein PPARalpha; peroxisome proliferator activated receptor FABP review

IT Proteins, specific or class
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(FABP (fatty acid-binding protein); interaction of fatty acid-binding proteins with the peroxisome proliferator-activated receptor alpha)

IT Proteins, specific or class
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(L-FABP (**liver fatty acid-binding protein**); interaction of fatty acid-binding proteins with the peroxisome proliferator-activated receptor alpha)

IT Gene
(expression; interaction of fatty acid-binding proteins with the peroxisome proliferator-activated receptor alpha)

IT Gene, animal
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(for peroxisome proliferator-activated receptor .alpha.; interaction of fatty acid-binding proteins with the peroxisome proliferator-activated receptor alpha)

IT Liver
(interaction of fatty acid-binding proteins with the peroxisome proliferator-activated receptor alpha)

IT Albumins, biological studies
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(interaction of fatty acid-binding proteins with the peroxisome proliferator-activated receptor alpha)

IT Fatty acids, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(interaction of fatty acid-binding proteins with the peroxisome proliferator-activated receptor alpha)

IT Peroxisome proliferator-activated receptors
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(.alpha.; interaction of fatty acid-binding proteins with the peroxisome proliferator-activated receptor alpha)

L3 ANSWER 14 OF 23 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN DUPLICATE 3

AN 1996:33427 BIOSIS

DN PREV199698605562

TI Purification, characterization, and cloning of a heme-binding protein (23 kDa) in rat liver cytosol.

AU Iwahara, Shin-Ichiro; Satoh, Hiroyuki; Song, De-Xiu; Webb, James; Burlingame, Alma L.; Nagae, Yasuhiro; Muller-Eberhard, Ursula (1)

CS (1) 525 East 68th St., Room N-804, New York, NY 10021 USA
 SO Biochemistry, (1995) Vol. 34, No. 41, pp. 13398-13406.
 ISSN: 0006-2960.
 DT Article
 LA English
 AB A, heme-binding protein (designated HBP23) has been purified from rat liver cytosol using heme-affinity chromatography and either reverse-phase high-performance liquid chromatography or sequential ion-exchange chromatography. The protein (23 kDa) binds heme with an affinity ($K_d = 55$ nM) higher than that of the abundant cytosolic heme-binding proteins. heme-binding protein (HBP)/**liver fatty acid-binding protein** (L-FABP) and the glutathione S-transferases (GSTs) ($K_d = 100-200$ nM). HBP23 is present in the cytosol of liver, **kidney**, spleen, small intestine, and heart, with the liver showing the highest content. A cDNA coding the 23-kDa protein was cloned using reverse transcription polymerase chain reaction with degenerative oligonucleotides derived from partial amino acid sequences. The cloned cDNA encoded 199 amino acids, and its amino acid sequence showed no homology to HBP/L-FABP, GSTs, or any other heme-binding proteins or hemoproteins. Homology search showed that HBP23 is highly homologous to mouse macrophage 23-kDa stress protein, which is inducible by oxidant stress in peritoneal macrophages (Ishii, T., Yamada, M., Sato, H., Matsue, M., Taketani, S., Nakayama, K., Sugita, Y., and Bannai, S. (1993) J. Biol.Chem. 268. 18633-18636). Thioredoxin peroxidase as well as HBP23 and the mouse macrophage 23-kDa stress protein are members of the peroxiredoxin family, a recently recognized class of antioxidant proteins (Chae, H. Z., Chung, S. J., & Rhee, S. G. (1994) J. Biol. Chem. 269, 27670-27678). An increase in HBP23 mRNA was observed in Hepa 1-6 cells after treatment with heme and cadmium and during liver regeneration after partial hepatectomy. These findings indicate an involvement of HBP23 in heme metabolism.

CC Cytology and Cytochemistry - Animal *02506
 Biochemical Studies - Proteins, Peptides and Amino Acids 10064
 Biochemical Studies - Lipids 10066
 Biochemical Studies - Minerals 10069
 Biophysics - Molecular Properties and Macromolecules *10506
 Enzymes - Chemical and Physical *10806
 Digestive System - Physiology and Biochemistry *14004

BC Muridae *86375

IT Major Concepts
 Biochemistry and Molecular Biophysics; Cell Biology; Digestive System (Ingestion and Assimilation); Enzymology (Biochemistry and Molecular Biophysics)

IT Chemicals & Biochemicals
 GLUTATHIONE S-TRANSFERASE; HEME

IT Miscellaneous Descriptors
 GLUTATHIONE S-TRANSFERASE; HEME METABOLISM; **LIVER FATTY ACID-BINDING PROTEIN**

ORGN Super Taxa
 Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
 Muridae (Muridae)

ORGN Organism Superterms
 animals; chordates; mammals; nonhuman vertebrates; nonhuman mammals; rodents; vertebrates

RN 50812-37-8 (GLUTATHIONE S-TRANSFERASE)
 14875-96-8 (HEME)

L3 ANSWER 15 OF 23 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 DUPLICATE 4

AN 1994:494184 BIOSIS

DN PREV199497507184

TI Studies on the efflux of heme from biological membranes.
 AU Liem, Heng H.; Noy, Noa; Muller-Eberhard, Ursula (1)
 CS (1) Dep. Pediatr./Hematol.-Oncol., Cornell Univ. Med. Coll., 525 E. 68th
 St. N-804, New York, NY 10021 USA
 SO Biochimica et Biophysica Acta, (1994) Vol. 1194, No. 2, pp. 264-270.
 ISSN: 0006-3002.
 DT Article
 LA English
 AB It is unknown how heme is distributed intracellularly from its site of
 synthesis in the mitochondria to other organelles. In previous work
 (Biochemistry 23, 3715, 1984) the transfer of heme from lipid bilayers to
 soluble proteins had been found to be independent of the recipient
 proteins' affinity for heme. Here, we investigated whether proteins are
 involved in the transfer of heme from biological membranes into aqueous
 media. We followed the release of 14C-labeled heme, from mitochondria
 preloaded with the heme, to BSA and found that only about 28% of the heme
 was extracted on the first wash. After the third wash 35-50% of the heme
 that had been partitioned into the membranes was extracted. Fourth and
 fifth washes with BSA or a cytosolic heme-binding protein (HBP, also known
 as **liver fatty acid binding**
protein) removed only insignificant amounts of 14C-labeled heme.
 Similarly, a large portion of the preloaded 14C-labeled heme could not be
 extracted from a variety of isolated membranes (inner and outer
 mitochondrial membranes, plasma membranes of liver cells, **kidney**
 cortex cells and erythrocyte membranes). By contrast, essentially all (14
 C)palmitate preloaded in biological membranes and all 14C-labeled heme
 preloaded in synthetic membranes was released to albumin (Biochemistry 23,
 3715, 1984). These observations suggest that, in general, heme associates
 with membrane components which can be distinguished into two compartments.
 One compartment releases its heme spontaneously, while another compartment
 binds heme so tightly that a specific process has to be evoked for its
 release.
 CC Cytology and Cytochemistry - Animal *02506
 Biochemical Studies - Proteins, Peptides and Amino Acids *10064
 Biochemical Studies - Porphyrins and Bile Pigments *10065
 Biophysics - Membrane Phenomena *10508
 Metabolism - Porphyrins and Bile Pigments *13013
 BC Muridae *86375
 IT Major Concepts
 Biochemistry and Molecular Biophysics; Cell Biology; Membranes (Cell
 Biology); Metabolism
 IT Chemicals & Biochemicals
 HEME
 IT Miscellaneous Descriptors
 BOVINE SERUM ALBUMIN; HEME TRANSFER; HEME-BINDING PROTEIN; MITOCHONDRIA
 ORGN Super Taxa
 Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia
 ORGN Organism Name
 rat (Muridae)
 ORGN Organism Superterms
 animals; chordates; mammals; nonhuman mammals; nonhuman vertebrates;
 rodents; vertebrates
 RN 14875-96-8 (HEME)
 L3 ANSWER 16 OF 23 MEDLINE on STN
 AN 93352664 MEDLINE
 DN 93352664 PubMed ID: 8349710
 TI Use of transgenic mice to map cis-acting elements in the **liver**
fatty acid-binding protein gene
 (Fabpl) that regulate its cell lineage-specific, differentiation-
 dependent, and spatial patterns of expression in the gut epithelium and in
 the liver acinus.

AU Simon T C; Roth K A; Gordon J I
CS Department of Molecular Biology, Washington University School of Medicine,
St. Louis, Missouri 63110.
NC DK30292 (NIDDK)
SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1993 Aug 25) 268 (24) 18345-58.
Journal code: 2985121R. ISSN: 0021-9258.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199309
ED Entered STN: 19931001
Last Updated on STN: 19931001
Entered Medline: 19930916

AB Axial pattern formation is sustained in the mammalian gut epithelium despite rapid and continuous renewal of its four principal cell lineages. The mouse and rat **liver fatty acid-binding protein** (L-FABP) genes (Fabpl) represent an excellent model for understanding the mechanisms that determine differentiation-dependent, cell lineage-specific, and distinct regional patterns of expression along the crypt-to-villus and duodenal-to-ileal axes of the gut, as well as within the liver acinus. We have used transgenic mice to map cis-acting elements in rat Fabpl that control these patterns of gene expression. Seven transgenes were analyzed, representing sequential deletions of the 5'-nontranscribed domain of Fabpl linked to the human growth hormone (hGH) gene beginning at its nucleotide +3 (L-FABP/hGH+3). Several pedigrees of mice containing each one of the L-FABP/hGH+3 transgenes were examined at the end of their 8th and 20th weeks of postnatal life using immunocytochemical and RNA hybridization analyses. A remarkably compact sequence spanning nucleotides -132 to +21 of Fabpl is sufficient to establish and maintain a distribution of reporter mRNA and protein in villus-associated enterocytes located along the duodenal-to-ileal axis of the gut that resembles the pattern of expression of the endogenous Fabpl gene. L-FABP-132 to +21/hGH+3 is also expressed in surface and pit mucous cells of gastric units and in enterocytes located in the colonic homologs of small intestinal villi, the surface epithelial cuffs. This pattern of transgene expression in the stomach and colon recapitulates that of the intact endogenous donor rat Fabpl but not that of mouse Fabpl, which is silent in these proximal and distal segments of the gastrointestinal tract. Analysis of mice containing L-FABP-4000 to +21/hGH+3, L-FABP-1600 to +21/hGH+3, L-FABP-596 to +21/hGH+3, L-FABP-246 to +21/hGH+3, and L-FABP-186 to +21/hGH+3 indicate that Fabpl's cephalocaudal gradient is influenced by cis-acting suppressors of cecal and colonic expression located between nucleotides -4000 and -1600 and by cis-acting activators of cecal and colonic expression located between nucleotides -597 and -351. L-FABP-132 to +21/hGH+3 is precociously activated in proliferating and nonproliferating epithelial cells located in intestinal crypts. The suppressor(s) of L-FABP accumulation in crypt epithelial cell populations are not represented between nucleotides -4000 and +21, indicating that different cis-acting sequences regulate regional and differentiation-dependent patterns of Fabpl expression. (ABSTRACT TRUNCATED AT 400 WORDS)

CT Check Tags: Animal; Human; Support, U.S. Gov't, P.H.S.
Aging: ME, metabolism
Base Sequence
*Carrier Proteins: BI, biosynthesis
*Carrier Proteins: GE, genetics
Cell Differentiation
Epithelial Cells
Epithelium: ME, metabolism
Fatty Acids: ME, metabolism
Gastrointestinal System: CY, cytology

*Gastrointestinal System: ME, metabolism
 Growth Hormone: BI, biosynthesis
 Growth Hormone: BL, blood
 Growth Hormone: GE, genetics
 Immunohistochemistry
 In Situ Hybridization
Kidney: CY, cytology
Kidney: ME, metabolism
 Liver: CY, cytology
 *Liver: ME, metabolism
 Mice
 Mice, Transgenic
 Molecular Sequence Data
 Oligodeoxyribonucleotides
 Organ Specificity
 RNA, Messenger: IP, isolation & purification
 *RNA, Messenger: ME, metabolism
 Rats
 Sequence Deletion

RN 9002-72-6 (Growth Hormone)
 CN 0 (Carrier Proteins); 0 (Fatty Acids); 0 (Oligodeoxyribonucleotides); 0
 (RNA, Messenger); 0 (fatty acid-binding proteins)
 GEN Fabpl

L3 ANSWER 17 OF 23 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1992:647417 CAPLUS
 DN 117:247417

TI Molecular identification of the liver- and the heart-type fatty
 acid-binding proteins in human and rat **kidney**. Use of the
 reverse transcriptase polymerase chain reaction
 AU Maatman, Ronald G. H. J.; Van de Westerlo, Els M. A.; Van Kuppevelt, Toin
 H. M. S. M.; Veerkamp, Jacques H.
 CS Dep. Biochem., Univ. Nijmegen, Nijmegen, 6500 HB, Neth.
 SO Biochemical Journal (1992), 288(1), 285-90 *cited ork*
 CODEN: BIJOAK; ISSN: 0306-3275

DT Journal
 LA English
 CC 6-3 (General Biochemistry)
 Section cross-reference(s): 13

AB The cDNAs of 2 types of fatty acid-binding protein (FABP) present in human
kidney, previously described as types A and B, were isolated using
 reverse transcriptase-PCR (RT-PCR) with human **kidney** mRNA and
 various sets of primers. The cDNA fragments were cloned and sequenced.
 Renal FABP type A and B cDNAs appeared to be completely identical to human
 liver- and heart-type FABP cDNAs, resp. The presence of liver-type FABP
 in rat **kidney** was demonstrated by chromatog., ELISA, and
 immunocytochem. The ratio and cellular distribution of the 2 FABP types
 varies markedly in human and rat **kidney**. RT-PCR permitted
 prepn. and identification of liver- and heart-type FABP cDNAs with mRNA
 from both male and female rat **kidney**.

ST fatty acid binding protein type **kidney**; liver type FABP protein
kidney; heart type FABP protein **kidney**

IT **Kidney**, composition
 (fatty acid-binding proteins of, of human and other mammal, liver and
 heart types of)

IT Proteins, specific or class
 RL: BIOL (Biological study)
 (L-FABP (**liver fatty acid-binding**
protein), of **kidney**, of human and other mammal)

IT Phosphoproteins
 RL: BIOL (Biological study)
 (h-FABP (heart fatty acid-binding protein), of **kidney**, of

human and other mammal)

L3 ANSWER 18 OF 23 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
DUPLICATE 5
AN 1990:235569 BIOSIS
DN BA89:122522
TI IMMUNOCHEMICAL QUANTITATION OF FATTY ACID-BINDING PROTEINS TISSUE
DISTRIBUTION OF LIVER AND HEART FABP TYPES IN HUMAN AND PORCINE TISSUES.
AU PAULUSSEN R J A; VAN MOERKERK H T B; VEERKAMP J H
CS DEP. BIOCHEMISTRY, UNIV. NIJMEGEN, THE NETHERLANDS.
SO INT J BIOCHEM, (1990) 22 (4), 393-398.
CODEN: IJBOBV. ISSN: 0020-711X.
FS BA; OLD
LA English
AB 1. Antisera against heart and **liver fatty acid**
-binding proteins (FABPs) were used in enzyme-linked
immunosorbent assay to study the cross-reactivity between these FABP types
of man, pig and rat, and to assess their tissue distribution in man and
pig. 2. No cross-reactivities were found of heart FABPs with anti-liver
FABP sera and vice versa. With the liver FABPs, marked species differences
were found, but the three proteins are clearly related. Human and pig
heart FABP are immunochemically closer related to each other than to this
protein from rat heart. 3. The tissue distribution of the heart and liver
FABP types is similar in man, pig and rat. Liver FABP is only found in
liver and intestine, and heart FABP is present in heart, skeletal muscle,
kidney, lung, brain and placenta. 4. Cardiac FABP is also found in
cultured human and rat endothelial cells. 5. The FABP content content of
human and pig liver is comparable to that of rat liver, but the tissue
concentrations of heart FABP are lower in man and pig than in rat. When
the latter values are expressed relative to the FABP content in heart,
analogous distribution patterns are observed in man, pig and rat.
CC Comparative Biochemistry, General *10010
Biochemical Methods - Proteins, Peptides and Amino Acids 10054
Biochemical Methods - Lipids 10056
Biochemical Studies - Proteins, Peptides and Amino Acids *10064
Biochemical Studies - Lipids *10066
Enzymes - Methods 10804
Physiology, General and Miscellaneous - Comparative *12003
Digestive System - Physiology and Biochemistry *14004
Cardiovascular System - Physiology and Biochemistry *14504
Immunology and Immunochemistry - General; Methods 34502
BC Suidae 85740
Hominidae 86215
Muridae 86375
IT Miscellaneous Descriptors
RAT ELISA

L3 ANSWER 19 OF 23 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
DUPLICATE 6
AN 1989:380867 BIOSIS
DN BA88:61457
TI DEVELOPMENTAL CHANGES IN THE EXPRESSION OF GENES INVOLVED IN CHOLESTEROL
BIOSYNTHESIS AND LIPID TRANSPORT IN HUMAN AND RAT FETAL AND NEONATAL
LIVERS.
AU LEVIN M S; PITT A J A; SCHWARTZ A L; EDWARDS P A; GORDON J I
CS DEP. MED., WASHINGTON UNIV. SCH. MED., 660 S. EUCLID AVE., BOX 8124, ST.
LOUIS, MO 63110, USA.
SO BIOCHIM BIOPHYS ACTA, (1989) 1003 (3), 293-300.
CODEN: BBACAQ. ISSN: 0006-3002.
FS BA; OLD
LA English
AB Cloned cDNAs encoding a number of enzymes involved in cholesterol

biosynthesis as well as extracellular and intracellular lipid transport were used to compare the developmental maturation of these biologic functions in the fetal and neonatal rat and human liver. The results of RNA blot hybridization analyses indicate that steady-state levels of rat HMG-CoA synthase, HMG-CoA reductase and prenyl transferase mRNAs are highest in late fetal life and undergo precipitous (up to 80-fold) co-ordinate reductions immediately after parturition. These changes reflect the ability of the fetal rat liver to produce large quantities of cholesterol as well as the repression of this function during the suckling period in response to exogenous dietary cholesterol. Striking co-ordinate patterns of HMG-CoA synthase, reductase and prenyl-transferase mRNA accumulation were also observed in four extrahepatic rat tissues (brain, lung, intestine and **kidney**) during the perinatal period. The concentrations of the three mRNAs in the 8-week-old human fetal liver are similar to those observed throughout subsequent intrauterine development with less than 2-fold changes noted between the 8th through 25th weeks of gestation. Analysis of the levels of human apo AI, apo AII, apo B and **liver fatty acid binding**

protein mRNAs during this period and in newborn liver specimens also indicated less than 2-3-fold changes. These observations suggest that the 8-week human liver has achieved a high degree of biochemical differentiation with respect to functions involved in lipid metabolism/transport which may be comparable to that present in 19-21 day fetal rat liver. Further analysis of human and rat fetal liver RNAs using cloned cDNAs should permit construction of a development time scale correlating hepatic biochemical differentiation to be constructed between these two mammalian species.

- CC Genetics and Cytogenetics - Animal *03506
- Genetics and Cytogenetics - Human *03508
- Comparative Biochemistry, General *10010
- Biochemical Methods - Lipids 10056
- Biochemical Methods - Sterols and Steroids 10057
- Biochemical Studies - Lipids *10066
- Biochemical Studies - Sterols and Steroids *10067
- Movement 12100
- Metabolism - Lipids *13006
- Metabolism - Sterols and Steroids *13008
- Developmental Biology - Embryology - Morphogenesis, General *25508
- BC Mammalia - Unspecified 85700
- Hominidae 86215
- Muridae 86375
- IT Miscellaneous Descriptors
- MAMMAL RNA COMPLEMENTARY DNA
- RN 57-88-5 (CHOLESTEROL)
- L3 ANSWER 20 OF 23 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
DUPLICATE 7
- AN 1989:182961 BIOSIS
- DN BA87:94227
- TI IMMUNOCHEMICAL QUANTITATION OF FATTY-ACID-BINDING PROTEINS I. TISSUE AND
INTRACELLULAR DISTRIBUTION POSTNATAL DEVELOPMENT AND INFLUENCE OF
PHYSIOLOGICAL CONDITIONS ON RAT HEART AND LIVER FABP.
- AU PAULUSSEN R J A; GEELLEN M J H; BEYNEN A C; VEERKAMP J H
- CS DEP. BIOCHEM., UNIV. NIJMEGEN, P.O. BOX 9101, 6500 HB NIJMEGEN,
NETHERLANDS.
- SO BIOCHIM BIOPHYS ACTA, (1989) 1001 (2), 201-209.
CODEN: BBACAQ. ISSN: 0006-3002.
- FS BA; OLD
- LA English
- AB Antisera against rat heart and **liver fatty**
acid-binding protein (FABP) were applied in
Western blotting analysis and ELISA to assess their tissue and

intracellular distribution, and the influence of development, physiological conditions and several agents on the FABP content of tissue cytosols. The data obtained are compared with the oleic acid-binding capacity. Heart FABP is found in high concentrations in heart, skeletal muscles, diaphragm and lung, and in lower concentrations in **kidney**, brain and spleen, whereas liver FABP is limited to liver and intestine. In heart and liver, FABP is only present in the cytosol. The FABP content of both heart and liver shows a progressive increase during the first weeks of postnatal development, in contrast to their constant oleic acid-binding capacity. The reciprocally declining .alpha.-fetoprotein content of both tissues may partially account for the complementary fraction of the fatty acid-binding capacity. The FABP content and the fatty acid-binding capacity of adult heart and liver were in good accordance under various physiological conditions. Addition of clofibrate to the diet induces an increase of liver FABP content, whereas feeding of cholesterol, cholestyramine, mevinolin or cholate caused a marked decrease. The significance of the combined determination of fatty acid-binding capacity and FABP content (by immunochemical quantitation and blotting analysis) is indicated.

CC Microscopy Techniques - Histology and Histochemistry 01056

Cytology and Cytochemistry - Animal *02506

Biochemical Studies - General 10060

Biochemical Studies - Proteins, Peptides and Amino Acids 10064

Biochemical Studies - Lipids 10066

Anatomy and Histology, General and Comparative - Microscopic and Ultramicroscopic Anatomy *11108

Metabolism - Lipids *13006

Metabolism - Proteins, Peptides and Amino Acids *13012

Nutrition - General Dietary Studies *13214

Nutrition - Sterols and Steroids *13226

Digestive System - Physiology and Biochemistry *14004

Cardiovascular System - Physiology and Biochemistry *14504

Developmental Biology - Embryology - Morphogenesis, General *25508

Immunology and Immunochemistry - General; Methods 34502

BC Muridae 86375

IT Miscellaneous Descriptors

LIPID METABOLISM OLEIC ACID ALPHA FETOPROTEIN DIET CLOFIBRATE

CHOLESTEROL CHOLESTYRAMINE MEVINOLIN CHOLATE

RN 57-88-5 (CHOLESTEROL)

81-25-4 (CHOLATE)

112-80-1 (OLEIC ACID)

637-07-0 (CLOFIBRATE)

11041-12-6 (CHOLESTYRAMINE)

75330-75-5 (MEVINOLIN)

L3 ANSWER 21 OF 23 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

AN 1989:216021 BIOSIS

DN BR36:105235

TI ANALYSIS OF **LIVER FATTY ACID BINDING**

PROTEIN IMMUNOREACTIVITY IN COLORECTAL ADENOCARCINOMAS AND ADENOMAS A COMPARISON WITH CARCINOMAS ARISING IN OTHER SITES.

AU CARROLL S L; GORDON J I; ROTH K A

CS DEP. PATHOL., WASHINGTON UNIV. SCH. MED., ST. LOUIS, MO., USA.

SO ANNUAL MEETING OF THE UNITED STATES AND CANADIAN ACADEMY OF PATHOLOGY (UNITED STATES-CANADIAN DIVISION OF THE INTERNATIONAL ACADEMY OF PATHOLOGY), SAN FRANCISCO, CALIFORNIA, USA, MARCH 5-10, 1989. LAB INVEST. (1989) 60 (1), 15A.

CODEN: LAINAW. ISSN: 0023-6837.

DT Conference

FS BR; OLD

LA English

CC General Biology - Symposia, Transactions and Proceedings of Conferences,

Congresses, Review Annuals 00520
 Microscopy Techniques - Histology and Histochemistry 01056
 Comparative Biochemistry, General *10010
 Biochemical Studies - Proteins, Peptides and Amino Acids 10064
 Biochemical Studies - Lipids 10066
 Biophysics - Molecular Properties and Macromolecules 10506
 Anatomy and Histology, General and Comparative - Microscopic and
 Ultramicroscopic Anatomy *11108
 Pathology, General and Miscellaneous - Comparative *12503
 Pathology, General and Miscellaneous - Diagnostic 12504
 Metabolism - Lipids *13006
 Digestive System - Pathology *14006
 Urinary System and External Secretions - Pathology *15506
 Reproductive System - Pathology *16506
 Neoplasms and Neoplastic Agents - Diagnostic Methods *24001
 Neoplasms and Neoplastic Agents - Immunology *24003
 Neoplasms and Neoplastic Agents - Neoplastic Cell Lines *24005
 Neoplasms and Neoplastic Agents - Biochemistry *24006
 Developmental Biology - Embryology - Morphogenesis, General 25508
 Laboratory Animals - General 28002
 Immunology and Immunochemistry - General; Methods *34502

BC Muridae 86375

IT Miscellaneous Descriptors

ABSTRACT MOUSE CELLULAR DIFFERENTIATION STOMACH BREAST **KIDNEY**
 ENDOMETRIUM IMMUNOSTAINING CANCER MARKER

L3 ANSWER 22 OF 23 MEDLINE on STN

AN 89079006 MEDLINE

DN 89079006 PubMed ID: 2462524

TI Mechanisms underlying generation of gradients in gene expression within
 the intestine: an analysis using transgenic mice containing fatty acid
 binding protein-human growth hormone fusion genes.

AU Sweetser D A; Birkenmeier E H; Hoppe P C; McKeel D W; Gordon J I

CS Department of Biological Chemistry, Washington University School of
 Medicine, St. Louis, Missouri 63110.

NC 5P30-CA 34196-05 (NCI)

DK 30292 (NIDDK)

DK 34384 (NIDDK)

SO GENES AND DEVELOPMENT, (1988 Oct) 2 (10) 1318-32.

Journal code: 8711660. ISSN: 0890-9369.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 198901

ED Entered STN: 19900308

Last Updated on STN: 19970203

Entered Medline: 19890127

AB The intestine is lined by a continuously regenerating epithelium that
 maintains gradients in '**liver**' **fatty acid**

binding protein (L-FABP) gene expression along its
 horizontal and vertical axes, i.e., from duodenum to colon and from crypt
 to villus tip. To identify cis-acting DNA sequences responsible for these
 regional differences, we linked portions of the L-FABP gene's 5'
 nontranscribed region to the human growth hormone (hGH) gene and examined
 hGH expression in transgenic mice. Nucleotides -596 to +21 of the rat
 L-FABP gene correctly directed hGH expression to enterocytes and
 hepatocytes. However, anomalous expression was observed in small
 intestinal crypts, colon, and renal proximal tubular epithelial cells.
 Addition of nucleotides -4000 to -597 of the L-FABP gene, in either
 orientation, suppressed renal hGH expression and restored a nearly normal
 horizontal, but not a vertical, hGH gradient in the intestine. Thus,

horizontal gradients of gene expression within the intestine can be maintained by orientation-independent, cis-acting suppressor elements.

CT Check Tags: Animal; Comparative Study; Human; Support, Non-U.S. Gov't; Support, U.S. Gov't, P.H.S.

Base Sequence

Carrier Proteins: BI, biosynthesis

*Carrier Proteins: GE, genetics

*Cloning, Molecular

Epithelium: ME, metabolism

Growth Hormone: BI, biosynthesis

Growth Hormone: BL, blood

*Growth Hormone: GE, genetics

Immunoblotting

Immunoenzyme Techniques

*Intestines: ME, metabolism

Kidney Tubules, Proximal: ME, metabolism

Liver: ME, metabolism

Mice

Mice, Transgenic

Mosaicism

Nucleic Acid Hybridization

Organ Specificity

Promoter Regions (Genetics)

RNA: BI, biosynthesis

Radioimmunoassay

*Regulatory Sequences, Nucleic Acid

Restriction Mapping

RN 63231-63-0 (RNA); 9002-72-6 (Growth Hormone)

CN 0 (Carrier Proteins); 0 (fatty acid-binding proteins)

L3 ANSWER 23 OF 23 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1986:458394 CAPLUS

DN 105:58394

TI Tissue expression of three structurally different fatty acid binding proteins from rat heart muscle, liver, and intestine

AU Bass, Nathan M.; Manning, Joan A.

CS Sch. Med., Univ. California, San Francisco, CA, 94143, USA

SO Biochemical and Biophysical Research Communications (1986), 137(3), 929-35
CODEN: BBRCA9; ISSN: 0006-291X

DT Journal

LA English

CC 13-1 (Mammalian Biochemistry)

AB Three structurally different 14-15-kilodalton fatty acid-binding proteins were purified from rat liver, small intestinal epithelium, and heart muscle and were quantitated in rat tissues by using specific antisera. Heart muscle fatty acid-binding protein comprised 5% of heart muscle cytosol protein and was also expressed in stomach, muscle, testis, ovary, **kidney**, brain, and adipose tissue, a pattern distinct from both liver protein (expressed in liver, small and large intestinal epithelia, and adipose tissue) and intestinal protein (expressed in small and large intestinal epithelium and stomach). Distinctive patterns of tissue expression of the 3 different fatty acid-binding proteins suggest that they may perform different specific functions in fatty acid transport and metab.

ST fatty acid binding protein tissue; heart fatty acid binding protein; **liver fatty acid binding protein**; intestine fatty acid binding protein

IT Brain, composition

Kidney, composition

Lung, composition

Muscle, composition

Ovary, composition

Testis, composition .
 (fatty acid-binding protein of heart expression in)
 IT Pancreas, composition
 (fatty acid-binding protein of liver expression in)
 IT Heart, composition
 Liver, composition
 (fatty acid-binding protein of, expression of, in other organs)
 IT Organ
 (fatty acid-binding proteins of heart and intestine and liver
 expression in)
 IT Adipose tissue, composition
 (fatty acid-binding proteins of heart and liver expression in)
 IT Stomach, composition
 (fatty acid-binding proteins of other tissues expression in)
 IT Cytoplasm
 (cytosol, fatty acid-binding proteins of, expression of, in organs)
 IT Proteins
 RL: PROC (Process)
 (fatty acid-binding, of heart and intestine and liver, expression of,
 in other organs)
 IT Intestine, composition
 (large, epithelium, fatty acid-binding proteins of liver and small
 intestine expression in)
 IT Intestine, composition
 (small, epithelium, fatty acid-binding protein of, expression of, in
 other organs)

=>